



Telecommunication Act – 2001
(Act 2001-36)

FORM 5

TU005

**APPLICATION FOR GENERAL RADIO-COMMUNICATION
STATION LICENCE (TERRESTRIAL MICROWAVE STATION)
(POINT-TO-POINT LINKS)**

PART A: APPLICANT INFORMATION

(Please read the Notes provided at the back of this Form before completion)

1. Name (if individual):.....

2. Nationality (if individual):.....

3. Address of Applicant (registered office or principal place of business):

.....
.....

4. Mailing Address (if different from registered office address):

.....
.....

5. Applicant is a (n):

Individual Corporation Unincorporate Association Partnership

Please indicate whether this is: a new application an application to modify an existing licence

an application to renew a licence

6. Telephone No.:..... 7. Facsimile No.:

8. "E-mail" address:.....

9. Name of Manager of entity:.....

10. Person in Barbados to be contacted in absence of Manager:

Name:..... Address:.....

.....
.....

Telephone No:..... "E-mail" Address:.....

11. Facsimile No:.....

12. Mobile No.:.....

Billing Address *(if it is different from Mailing Address)*

Pager/Handphone Number:

Is Application Submitted with Cheque?

Yes
 No

14. General Information:.....
.....

PART B: TECHNICAL INFORMATION

System Description

.....
.....

Proposed Use of System

.....
.....

15. Station 1 Information

Station Name *(cross-reference with Pages 9 – 13)*.....

Location:

Station Address:

Latitude in Degrees-Minute-Seconds (N/S) (e.g. 120-45-30 N)	
Longitude in Degrees-Minutes-Seconds (E/W) (e.g. 120-45-30 E)	
Site Elevation (metres above mean sea level)	
Building Heights (metres)	
Antenna Structure Height (metres)	
Transportable Radius of Operation (Km)	<input type="checkbox"/> Yes <input type="checkbox"/> No
16. Station 2 Information	
Station Name (cross-reference with Pages 9 - 13).....	
Location:	
Latitude in Degrees-Minutes-Seconds (N/S) (e.g. 120-45-30 N)	
Longitude in Degrees-Minutes-Seconds (E/W) (e.g. 120-45-30 E)	
Site Elevation (metres above mean sea level)	
Building Heights (metres)	
Antennae Structure Height (metres)	
Transportable Radius of Operation (Km)	<input type="checkbox"/> Yes <input type="checkbox"/> No
17. Station 3 Information	
Station Name (cross-reference with Pages 9 – 13)	
Location:	
Station Address	

Latitude in Degrees-Minutes-Seconds (N/S) (e.g. 120-45-30 N)	
Longitude in Degrees-Minutes-Seconds (E/W) (e.g. 120-45-30 E)	
Elevation (metres above mean sea level)	
Building Heights (metres)	
Antennae Structure Height (metres)	
Transportable Radius of Operation (Km)	<input type="checkbox"/> Yes <input type="checkbox"/> No
18. Station 4 Information	
Station Name (cross-reference with Pages 9 – 13)	
Location	
Station Address	
Latitude in Degrees-Minutes-Seconds (N/S) (e.g. 120-45-30 N)	
Longitude in Degrees-Minutes-Seconds (E/W) (e.g. 120-45-30 E)	
Elevation (metres above mean sea level)	
Building Heights (metres)	
Antennae Structure Height (metres)	
Transportable Radius of Operation (Km)	<input type="checkbox"/> Yes <input type="checkbox"/> No
19. Frequency Information	
Station Name (cross-reference with Pages 2 - 4).....	

Usage Period	Start Time	Stop Time
	Transmit	Receive
Desired Frequency Range (MHz)		
Desired Carrier Frequency (MHz)		
Feeder Line Type		
Feeder Line Length (metres)		
Bandwidth (kHz)		
Emission		
Polarization (Linear, Circular, etc.)		
Bit Error Rate (Digital Only)		
Baseband Noise/Power Ratio (dB) (Analogue Only)		
Modulation Scheme e.g. QAM, PSK		
Modulation Type (Digital/Analogue)		
Multiplexing Method e.g. FDMA, TDMA		
20. Link Information		
Link to Station (cross-reference to Pages 2 - 4).....		
Main Link	Station Link	
Aux Link 1	Station Name	
Aux Link 2	Station Name	
Aux Link 3	Station Name	
Link to Geographical Point		
Main Link	Latitude in Degrees-Minutes-Seconds (N/S) e.g. 120-45-30N	

	Longitude in Degrees-Minutes-Seconds (E/W) (e.g. 120-45-30 E)	
	Link Location	
21. Radio Equipment Information		
Station Name (cross-reference to Pages 2 - 4).....		
	Transmitter	Receiver
Manufacturer		
Model		
Serial No.		
Frequency Range (MHz)		
Bit Rate (Mb/s) (Digital Only)		
No. of Voice Channels (analogue only)		
Transmitter Rated Power (dBm)		
Frequency Stability (Hz)		
Reliability (%)		
Long Term C/I (dB)		
Short Term C/I (dB)		
Minimum Acceptable Rx Signal Level (dBm)		
22. Antenna Information		
Manufacturer		
Model		
Antenna Type		

Antenna Diameter (m)	
Frequency Range (MHz)	
Height Above Ground	
Level (m)	
Gain (dB)	
3dB beam width (degrees)	
Connector or Branching Loss (dB)	
Elevation Angle (degrees)	
Antenna Displacement from Station Location	
North Latitude	
Displacement (m)	
East Longitude	
Displacement (m)	
23. Filter Information	
Manufacturer	
Model	
RF Filter Type (bandpass or reject)	
Total Loss (dB)	
PART C: DOCUMENTATION EVIDENCE	
24. Technical Documents to be submitted	
Antenna Radiation Diagram (co-polar & cross polar)	

Transmitter Spectrum Mask or Diagram

Receiver Filter Mask or Diagram

PART D: CERTIFICATION STATEMENT

We declare that we have not commenced provision or operation of any of the telecommunications or networks applied for in this application and all the information in this application form is true and correct. We understand that approval from the Ministry responsible for Telecommunications in Barbados for this application is based on information as declared in this application. We further acknowledge that, should any of the information declared herein be found to be untrue, inaccurate or incorrect, any licence granted by the Ministry will be rendered null and void. The Ministry reserves its right to impose penal sanctions against us under any applicable laws and regulations in force and this is without prejudice to any civil remedies that the Ministry has against us if any of the information declared in the application be found to be untrue.

.....
Signature

.....
Company Stamp

.....
Name

.....
Date

IMPORTANT INFORMATION

1. Guidelines are attached to this Application Form.
2. Payment of licence fees may be made by cash or cheque.
3. Where supporting documents are required, applicant is required to send documents by mail to the -

Telecommunications Unit
Ministry responsible for Telecommunications
"The Business Centre"
Upton,
ST. MICHAEL
Telephone No. 246-430-2251 Fax No: 246-426-0960

EXPLANATORY NOTES

This document is designed to provide applicants with guidelines and instructions to assist them in properly completing the **APPLICATION FOR TERRESTRIAL MICROWAVE STATION LICENCE** form.

The Application for Terrestrial Microwave Station Licence application form is to be completed by the applicant and submitted to the Chief Telecommunications Officer.

An application may be submitted for one or more stations. The application form can be used to describe up to four stations and the applicant may make additional copies of the pages of the form if required. For each station described on pages 2, 3, and 4, a complete set of pages 4 to 7 should be completed.

Each completed application should consist of the information referred to in the sections 1- 12 below.

The information in each of these sections is required to properly analyse the application. The applicant should print all responses clearly. Failure to complete all portions of the application could result in a delay in the issuance of a Licence.

PART A

Section 1 – Applicant Information

This section requests particular information about the applicant, either a Company or individual.

If the applicant is applying on behalf of a Company, the name should be the Name of the Company under whose name the licence will be issued. Please also indicate its Business Registration Number and type of Business, because the Ministry may need to contact the applicant for more information. The name of Contact Person and the Designation and Department of the Contact Person should be entered.

If it is an individual applying, as opposed to a Company, the name should be the Name of the individual under whose name the licence will be issued. The Nationality of the applicant is also required.

Two separate addresses are indicated:

- (a) a correspondence address where all licences and other correspondence, except for invoices will be sent; and
- (b) a billing address where the invoices and any correspondence regarding billing will be sent.

If both addresses are the same then only the correspondence address needs to be completed. Because the Ministry may need to contact the applicant for more information, the applicant is requested to indicate a telephone number and if available, a fax or telex number.

PART B: TECHNICAL INFORMATION

Section 2 – System Description

Provide a description of the system, its network configuration and its proposed use.

Sections 3, 4, 5, 6 – Station Information

The information requested in this section pertains to the actual station site.

Station Name

The applicant should indicate the Callsign of the Station if available, or a name by which the station can be identified.

Location or Station Address

The station location should also be indicated. An address should be provided if appropriate.

Co-ordinates

The Latitude and Longitude of the building or structure to which the antenna is attached should be provided. Accuracy of this location should be to the second and the further refinement (in metres) will be required in section 10 under “Antenna Displacement”.

The above information is required to accurately locate the antenna relative to that location for technical calculations. If the station can be moved, then the applicant should indicate that it is transportable and they should further indicate the radius of operation from the co-ordinates provide.

Site Elevation

Site Elevation in metres above mean sea level.

Building Height

If the antenna is to be mounted on top of a building, give the height of the building in metres.

Antenna Structure Height

Antenna Structure Height in metres

Section 7 – Frequency Information

The applicant should indicate which station the information is being provided for. The station applies to frequency as well as other information contained in section 8 through 12 on the same form.

Usage Period

State a specific period when station will be in operation else indicate H24 for 24 hour operation.

Desired Frequency Range or Carrier Frequency

Indicate a preferred or desired transmit or receive frequency range. The applicant should be aware that it may not be possible to accommodate the request and an alternate frequency may be assigned.

Feeder Information

If a feeder is provided in the system’s configuration, it’s length, type of line or cable used and loss should also be included.

Necessary bandwidth

Necessary Bandwidth is defined as for a given class of emission, the width of a frequency band which is just sufficient to ensure the transmission or reception of information at the rate and quality required under specified conditions.

Emission

Set of characteristic of an emission, designated by standard symbols set by ITU (Appendix SI of the Radio Regulations) e.g. type of modulation of the main carrier, modulating signal, type of information to be transmitted, and also, if appropriate, any additional signal characteristics. May leave blank if not sure.

Polarization

The type of polarization such as linear or circular.

BER

For digital systems include the Bit Error Rate (BER) of transmission and reception in Megabits or second. The BER measures the average number of bits errors caused by noise. The value is designated as the negative exponent to the base 10.

Baseband Noise or Power Ratio

For analogue systems include Baseband Noise or Power Ratio in dB for transmit and receive. Baseband Noise or Power is the ratio between the noise (unwanted signal) and the power (wanted signal). Modulation Scheme/Type/Multiplexing Method. The modulation scheme is a description of how the information carried by the signal is encoded on to the carrier frequency. The modulation type is either analogue or digital. For digital modulation include the modulation factor.

Section 8 – Link Information

The coverage or link section is used to describe either the reception point for the proposed transmitting station or in the case of a proposed receiving station, its source transmission point.

The following description is intended to guide the applicant in determining which fields to complete for specific situations. Link Station Used for a transmitting station where the intended recipient is another fixed station. The applicant should enter the callsign or name of station (cross-reference to Page 2 to 4). If alternate stations can be reached then they should be identified in the same way with the auxiliary links.

Link to Geographical Point

Used for a transmitting station where the intended recipient is a fixed point. The applicant should enter the co-ordinates of the specific point. Used for a receiving station where the source of the transmission is a fixed point. The applicant should enter the co-ordinates of the specific transmitting location.

Section 9 – Radio Equipment Information

The section requests the applicant to provide the Ministry with information on the equipment to be used at the station. The applicant should ensure that the equipment, antenna and filter information are related to the correct station by indicating the station name in this section.

Equipment Identification

The applicant must provide for each type of equipment and associated frequency, the manufacturer and model. The serial number for the transmitter or receiver should also be provided, if available.

Frequency Range

The operating Frequency range in MHz for transmitter and receiver.

Equipment Capacity

Indicate the capacity of the equipment for digital systems indicate the Bit Rate in MB/s, For analogue systems indicate the number of voice channels.

Equipment Output

For a transmitter, the output Rated power in dBm should be provided.

Frequency Stability

Frequency stability in Hertz (Hz) is the ability of radio apparatus to stabilize or remain tuned to a specified tolerance.

Long Term C/I (dB)

This is the value of the wanted-to-unwanted signal ratio at the receiver input with reference to the Minimum Receive Level of the receiver, such that a specified reception quality of the wanted signal is achieved at the receiver output.

Short Term C/I (dB)

This is the value of the wanted-to-unwanted signal ratio at the receiver input with reference to signal level at the receiver produced by the associated transmitted, such that a specified reception quality of the wanted signal is achieved at the receiver output.

Receiver Threshold Level

For receiver indicate the Minimum Acceptable Received Signal level in dBm.

Section 10 – Antenna Information

This section requests the applicant to provide the Ministry with information on the antenna equipment to be use at the station.

Antenna Identification

Indicate the manufacturer and model and type (e.g. parabolic or on-parabolic) of antenna and its diameter.

Frequency range

The operating transmit and receive Frequency Range in MHz.

Antenna Height Above Ground

The height of the antenna above the ground, measured from the ground.

Antenna Gain

The gain is the ratio of the maximum radiation (in a given direction) to that of a reference antenna (in the same direction) for equal power input. For microwave stations, the reference antenna is an isotropic dipole.

3dB Beam Width

Indicate the 3dB beam width measured in degrees.

Connector or Branching

Loss Indicate the loss in dB.

Elevation

Angle Elevation Angle is the angle in the vertical plane between the horizontal plane and the direction in which the antenna points.

Antenna Displacement

North Latitude Displacement is the latitudinal displacement in metres from the exact station co-ordinates to the actual antenna location, measured from north to south. East Longitude Displacement is the longitudinal displacement in metre from the exact station co-ordinates to the actual antenna, measured from east to west.

The displacement in the antenna's location expressed as +/- metres from the co-ordinates. Positive offsets indicate an increase in latitude or longitude and negative offsets indicate a decrease.

Section 11 – Transmit/Receive RF Filter Information

This section requests the applicant to provide the Ministry with information on the filter equipment (if any) to be used at the station.

Filter Identification

Indicate the manufacturer, model and type of RF filter such as band pass band reject etc.

Total Loss

Total Filter loss in dB. Insertion Loss is defined as the loss of signal level in dB caused by the insertion of the filter into a signal path. Isolation A is the amount of isolation loss provided by certain type of filters (e.g. Isolators, Circulator and Band Reject Duplexer) for a given frequency or frequency range. Isolation A is the isolation from the transmitter on the receive side. Isolation B is the amount of isolation loss provided by certain types of filters (e.g. Band Reject Duplexer) for a given frequency or frequency range. Isolation B is the isolation from the receiver on the transmitter side.

PART C:

Section 12 – Technical Documents Information

Set each of the Antenna Radiation Diagram (Copolar and Crosspolar), Transmitter Spectrum Mask or Diagram and Receive Filter Mask or Diagram are to be submitted.

PART D

Certification and Signature

The applicant is requested to carefully read the certification and sign and date the form where indicated. If the application is made on behalf of a company then the company stamp should be provided in the space indicated.