How to Change WaveCall Coverage Areas

For WaveCall™ by Marlink

Updated: **May 22nd, 2012**

NOTE: To ensure you have the most current information, please visit our ftp site at ftp://ftp.vizada-usa.net/pub/SupportPage.htm which is always updated with the latest WaveCall News and Information – including this document.

Southbury Teleport, Southbury CT, USA
To contact the Southbury Teleport directly for technical support:
Phone: +1 203 262 5015 (worldwide)

Overview

The purpose of these instructions is to instruct WaveCall customers on how change from one satellite coverage area to another. It also documents the basic information on each coverage area, i.e. spotbeam maps, transmit and receive frequencies, polarizations and SeaTel DAC settings.
Please review ALL instructions prior to attempting the changes needed for the specific satellite beams.

Procedure

When you know you are going to be leaving your current area of satellite coverage, please call **Marlink WaveCall Help Desk** or send an email to support.WaveCall@Marlink.com

WaveCall Help Desk assisted change-over

1. Reference the below maps to determine your area of satellite coverage:
   The current WaveCall areas of coverage are:

Map Page	Network	East Long		West Long
Page 10.	**ABS1** South Asia / IOR	**75°E**	---	**285°W**
Page 11.	**AMC9** North America	**277°E**	---	**83°W**
Page 12.	**GE23** North Pacific	**172°E**	---	**188°W**
Page 13.	**GE23** South West Pacific	**172°E**	---	**188°W**
Page 14.	**GE23** South East Pacific	**172°E**	---	**188°W**
Page 15.	**GE23** South Pacific	**172°E**	---	**188°W**
Page 16.	**IS-1002** Europe	**359°E**	---	**1°W**
Page 17.	**NSS7** Caribbean Andes	**338°E**	---	**22°W**
Page 18.	**Satmex5** Continental	**243.2°E**	---	**116.8°W**
Page 19.	**SES4** European & Middle East	**338°E**	---	**22°W**
Page 20.	**SES4** Southern Cone (South America)	**338°E**	---	**22°W**
Page 21.	**T11N** Atlantic Ocean	**322.5°E**	---	**37.5°W**
Page 22.	**T11N** US & Caribbean Andes	**322.5°E**	---	**37.5°W**
Page 23.	**T11N** West Africa	**322.5°E**	---	**37.5°W**
Page 24.	WaveCall by Marlink Global Area Coverage Map			

2. Following the below steps with assistance from a **WaveCall Help Desk Engineer**.
   OR
   Load the options file manually using iSite. See the steps provided on **Page 8**.

3. Call the **WaveCall Help Desk** to work with an engineer to configure your system.
- You can always ask and confirm when the best time to change spot beams may be.
- Please be aware of any blockage or obstructions which may prevent you from coming up on the new satellite.
- You may call and request the approximate pointing angle of the new satellite from your current location; Azimuth pointing will be given in ***True North*** degrees.

4. The Marlink Help Desk Engineer will need you to prepare the following:

a. From the SeaTel DAC, *please write down the current settings*:
(DAC-97 Press **Ship** button **|** DAC 2200/02 Press **NEXT** button)
Longitude and Latitude *(GPS location)*
(DAC-97 Press **Antenna** button **|** DAC 2200/02 Press **NEXT** button)
Azimuth and Elevation Position
AGC *(Located Bottom Right of the display)*
(DAC-97 Press **SAT** button **|** DAC 2200/02 Press **NEXT** button)
Receiver Frequency *(Bottom Left)*
Satellite Longitudinal Position *(Top Left)*
(DAC-97 Press **MODE** button as needed **|** DAC 2200/02 Hold **Left & Right** button together for 6 seconds – **Enter** button as needed)
TX Polarity

(If when pressing the **MODE** button, if you cannot advance further than 'STATUS REMOTE AUX XXXX', key in *7979* then press the **Enter** button. This will give you the necessary access to the menu.) **CAUTION:** This area holds DAC operation parameters. Do not make any changes to any field unless instructed to do so.

b. The **WaveCall Help Desk Engineer** will then inform you of what your settings will change to, and what to expect for new antenna pointing values.

5. The **WaveCall Help Desk Engineer** will then push a new Options File to the modem. You may request an option file be emailed to you before hand; along with instructions for self help recovery should a network error occur while updating the modem.

6. The modem will then reset. You will notice the modem's network and power LEDs extinguish.

7. If the modem does not reset itself, notify the **WaveCall Help Desk Engineer**. We will re-send the option file and reset command.

8. After about 2-3 minutes, your modem will have fully rebooted itself and is now prepared for the new Spot Beam.

Note: When changing INTO or OUT OF the NSS-7 EU, Telstar-11N AOR - W. Africa, IS-1002 N.E. & GE-23 NP – SEP – SWP Beams, YOU MUST PHYSICALLY CHANGE LNB's on the SeaTel antenna if you have a SINGLE BAND LNB. See **Tables 3-A**

*** REMOVE POWER TO THE REMOTE TERMINAL DURING THE LNB SWAPOUT. DO NOT UNPLUG AND REPLUG THE COAX CABLE INTO THE LNB WITH THE REMOTE TERMINAL ON.

SeaTel DAC changes after Modem Update & Reboot

9. At the SeaTel DAC Unit:

a. Change Receiver Frequency.

- See **Table 4–A** for Single Band LNB & Quad Band LNB's Frequencies.
  - Quad LNB may need to have their band settings changed.
- See **Table 5–A** for Dual Band LNB Frequencies.

b. Change TX Polarity if required. See **Tables 1**.

If the TX POL value is 0002 it then becomes 0004; if it is 0004 it then becomes 0002. **TX POL** is found under the **MODE** options of the DAC unit. Please refer to your SeaTel manual or call us for further guidance if needed.

10. Target the new satellite: Enter the satellite longitude number per **Table 4–A or 5–A**
DAC-97: Press **SAT** button twice, key in the sat value and press the **Enter** button.
DAC 2200/02: Press **NEXT** button to see Satellite display, then the **Enter** button, then the **Right Arrow**, key in the sat value and then press the **Enter** button.

You should see your AGC *return to near** what it was on the other beam. Once it does, you should see the "Network or RX" light on the Remote terminal indicate it has a lock with the network.

WaveCall Network AGC levels can vary up to 30-40 AGC points between each other.

11. Save the settings on your SeaTel DAC unit:
DAC-97: Push the **MODE** button until you see '**Save New Parameters**'.
Press the **Up Arrow** and **ENTER** buttons. Perform twice.
DAC 2200/02: Hold **Left & Right** buttons together for 2 seconds, **Right Arrow** button, then the **Enter** button - You should see '**Parameters Saved**' if performed correctly.
Once settings have been saved, press the **RESET** button once.

12. If the Network or RX light does not illuminate steady GREEN, check for a high AGC. If you have a high AGC and the antenna is tracking, you are either tracking the wrong satellite, or you are not under the new spot beam coverage area yet. Confirm your settings again; following steps 1-4.

If that doesn't work, you can either wait until you are sure you are under stronger spot beam coverage and try again, or continue to work with the **WaveCall Help Desk Engineer** for troubleshooting assistance.

13. If you performed the above following steps while not the phone with a **WaveCall Help Desk Engineer**, please call to inform us that you have loaded the option file and updated your DAC so we may update the HUB to allow access to the new network.

Appendix 1
BUC INFO

Notice: ABS-1 IOR/ASIA requires an ***Extended Ku-Band 8W BUC*** for WaveCall service. Please refer to your Seatel Dealer/Installer for installing an Extended Ku-Band BUC.

All other WaveCall coverage regions can operate using a ***Normal Ku-Band 4W BUC***

Normal Ku-Band: 14000 – 14500 MHz
Typical models used in Seatel antennas for WaveCall:
NJT5025 (4W) – NJT5017 (4W) – NJT5118 (8W)

Extended Ku-Band: 13750 – 14500 MHz
Typical models used in Seatel antennas for WaveCall:
Codan 4908-mini (8W) – Codan 6908 (8W) – NJT5218 (8W)

Table 1
Tx Polarity Settings

Region/Spot Beam	Tx polarity	ACU Tx Polarity Setting
AMC9 NA	**Vertical**	**0002** (Antenna Serial Number 03001159 or lower use 0004)
GE23 S.E. Pacific		
GE23 S.W. Pacific		
GE23 S. Pacific		
NSS7 Southern Cone		
SES4 European		
Telstar11N US		
Telstar11N AOR		
Telstar11N W. Africa		
ABS1 IOR/Asia	**Horizontal**	**0004** (Antenna Serial Number 03001159 or lower, use 0002)
GE23 N. Pacific		
IS1002 Northern Europe		
NSS7 Caribbean		
Satmex5 Continental		

Table 2
DAC Voltage & Tone Settings for LNB

For DAC-97's & 2200/02's that generate voltage & tone from the DAC.

A. Single Band LNB's
   All LNB's - Volt = HORZ (18VDC)
B. Dual Band LNB's
   Low Mode - Volt = VERT (13VDC)
   High Mode - Volt = HORZ (18VDC)
C. Quad Band LNB's
   Band 1 - Volt = VERT (13VDC) & Tone = Off
   Band 2 - Volt = VERT (13VDC) & Tone = On
   Band 3 - Volt = HORZ (18VDC) & Tone = Off

Table 3
Commonly used LNB's
In WaveCall installations.

A. Single Band LNB's

For networks: AMC9 NA, NSS7 CA & SC, Telstar11N US & Satmex5
NJR2535S, RF 11.70-12.20 GHz, LO 10.75 GHz,
Local Stability +/- 3.0ppm, IF 950-1,450 MHz **(16-24vDC Requirement)**

For networks: SES4 EU, Telstar11N AOR - W. Africa, IS-1002 N.E. & GE23 NP – SEP – SWP
NJR2537S, RF 10.95-11.70 GHz, LO 10.00 GHz,
Local Stability +/- 3.0ppm, IF 950-1,700 MHz **(16-24vDC Requirement)**

For networks: GE23 SP & ABS1
NJR2536S, RF 12.25-12.75 GHz, LO 11.30 GHz,
Local Stability +/- 3.0ppm, IF 950-1,450 MHz (**16-24vDC Requirement**)

B. Dual Band LNB's

For networks: All Marlink Networks – Except for those noted below, SES4 EU & IS-1002 NE.
SPV-40SM PLL – Low Mode (SeaTel Version), 11.25-12.00 GHz, LO 10.30 GHz,
Local Stability +/- 3.0ppm, IF 950-1,700 MHz **(10-15vDC Requirement)**

For networks: Satmex-5 & GE-23 SP
SPV-40SM PLL – High Mode (SeaTel Version), 12.00-12.75 GHz, LO 11.05 GHz,
Local Stability +/- 3.0ppm, IF 950-1,700 MHz **(16-24vDC Requirement)**

C. Quad Band LNB's

For networks: SES4 EU, Telstar11N AOR - W. Africa, IS-1002 N.E. & GE23 NP – SEP – SWP
SMW Q PLL Type R – Band 1, RF 10.70-12.75 GHz, LO 10.00 GHz,
Local Stability +/- 3.0ppm, IF 950-1,700 MHz **(10-15vDC Requirement) & (No Tone)**

For networks: AMC9 NA, NSS7 CA & SC, Telstar11N US & Satmex5
SMW Q PLL Type R – Band 2, RF 10.70-12.75 GHz, LO 10.75 GHz,
Local Stability +/- 3.0ppm, IF 950-1,700 MHz **(10-15vDC Requirement) & (22 kHz Tone)**

For networks: GE23 SP & ABS1
SMW Q PLL Type R – Band 3, RF 10.70-12.75, GHz, LO 11.30 GHz,
Local Stability +/- 3.0ppm, IF 950-1,700 MHz **(16-24vDC Requirement) & (No Tone)**

D. LNB's not used currently in Marlink Networks

NJR2539S, RF 11.20-11.70 GHz, LO 10.25 GHz,
Local Stability +/- 3.0ppm, IF 950-1,450 MHz (16-24vDC Requirement)

SMW Q PLL Type R – Band 4, RF 10.70-12.75, GHz, LO 9.75 GHz,
Local Stability +/- 3.0ppm, IF 950-1,700 MHz (16-24vDC Requirement) & (22 kHz Tone)

Table 4–A
Marlink WaveCall Receiver Frequencies (MHz) – Single & Quad Band LNB

Region/Spot Beam	Position	Sat Freq	Antenna Tx / Rx Pol	LNB L.O.	ACU Freq
ABS1 IOR/Asia	**75E**	12662.21	**H / H - Co-pol**	11300	**1362.03**
AMC9 NA	**83W**	11954.67	**V / H -** Cross-pol	10750	**1204.67**
GE23 N. Pacific	**172E**	11635.80	**H / V -** Cross-pol	10000	**1635.80**
GE23 S.E. Pacific	**172E**	11648.45	**V / V - Co-pol**	10000	**1648.45**
GE23 S.W. Pacific	**172E**	11542.65	**V / V - Co-pol**	10000	**1542.65**
GE23 S. Pacific	**172E**	12713.82	**V / H -** Cross-pol	11300	**1413.82**
IS-1002 European	**1W**	11069.14	**H / V -** Cross-pol	10000	**1069.14**
NSS7 Caribbean 1	**22W**	11970.45	**H / V -** Cross-pol	10750	**1220.45** or
NSS7 Caribbean 2	**22W**	11976.98	**H / V -** Cross-pol	10750	**1227.00**
NSS7 Southern Cone	**22W**	11806.75	**V / H -** Cross-pol	10750	**1056.75**
Satmex-5 Continental	**116.8W**	12089.00	**H / V -** Cross-pol	10750	**1339.00**
SES4 European	**22W**	11053.75	**V / H -** Cross-pol	10000	**1053.75**
Telstar-11N US	**37.5W**	11992.85	**V / H -** Cross-pol	10750	**1242.85**
Telstar-11N AOR	**37.5W**	11538.65	**V / H** - Cross-pol	10000	**1538.65**
Telstar-11N W. Africa	**37.5W**	11491.20	**V / H -** Cross-pol	10000	**1491.20**

DVBs2 networks -- For **X5 Evolution** remotes only, iNFINITI's are not compatible.
Yellow Highlighted Text indicates a recent major frequency change affecting tracking frequency.
Green Highlighted Text indicates a recent satellite spot-beam coverage change.

Table 4–B
Alternate ACU tracking Frequencies (MHz) – Single & Quad Band LNB

NOTE: In order to prevent your SeaTel antenna control unit from pointing off the satellite when the hub's transmissions are taken down for an upgrade, we recommend that WaveCall customers set their SeaTel DAC to track the following non-WaveCall frequencies, which will not be interrupted during upgrades.

Region/Spot Beam	Rx Pol	ACU Freq(s)
ABS1 IOR/Asia	H	**1279**
AMC9 NA	H	**1251**
GE23 N. Pacific	V	**1633**
GE23 S.E. Pacific	V	No suitable alternates.
GE23 S.W. Pacific	V	**1400**
GE23 S. Pacific	H	No suitable alternates.
IS-1002 Europe	V	No suitable alternates.
NSS7 Caribbean	V	**1231**
NSS7 Southern Cone	H	**1171**
Satmex5 Continental	V	**1302**
SES4 European	H	**1563**
Telstar11N US	H	No suitable alternates.
Telstar11N AOR	H	No suitable alternates.
Telstar11N W. Africa	H	No suitable alternates.

Table 5–A
Marlink WaveCall Receiver Frequencies (MHz) – Dual Band LNB *(SPV-40SM)*

Region/Spot Beam	Position	Sat Freq	Antenna Tx / Rx Pol	LNB L.O.	ACU Freq
ABS1 IOR/Asia	**75E**	12662.21	**H / H - Co-pol**	11050	**1612.03**
AMC9 NA	**83W**	11954.67	**V / H -** Cross-pol	10300	**1654.67**
GE23 N. Pacific	**172E**	11635.80	**H / V -** Cross-pol	10300	**1335.80**
GE23 S.E. Pacific	**172E**	11648.45	**V / V - Co-pol**	10300	**1348.45**
GE23 S.W. Pacific	**172E**	11542.65	**V / V - Co-pol**	10300	**1242.65**
GE23 S. Pacific	**172E**	12713.82	**V / H -** Cross-pol	11050	**1663.82**
NSS7 Caribbean 1	**22W**	11970.45	**H / V -** Cross-pol	10300	**1670.45** or
NSS7 Caribbean 2	**22W**	11976.98	**H / V -** Cross-pol	10300	**1677.00**
NSS7 Southern Cone	**22W**	11806.75	**V / H -** Cross-pol	10300	**1506.75**
Satmex5 Continental	**116.8W**	12089.00	**H / V -** Cross-pol	11050	**1039.00**
Telstar11N US	**37.5W**	11992.85	**V / H -** Cross-pol	10300	**1692.85**
Telstar11N AOR	**37.5W**	11538.65	**V / H** - Cross-pol	10300	**1238.65**
Telstar11N W. Africa	**37.5W**	11491.20	**V / H -** Cross-pol	10300	**1191.20**
SES4 European	**22W**	**Will Not Work With Dual Band LNB**			
IS-1002 European	**1W**	**Will Not Work With Dual Band LNB**			

DVBs2 networks -- For **X5 Evolution** remotes only, iNFINITI's are not compatible.
Yellow Highlighted Text indicates recent major frequency change affecting tracking frequency.

Table 5–B
Alternate ACU tracking Frequencies (MHz) – Dual Band LNB

NOTE: In order to prevent your SeaTel antenna control unit from pointing off the satellite when the hub's transmissions are taken down for an upgrade, we recommend that WaveCall customers set their SeaTel DAC to track the following non-WaveCall frequencies, which will not be interrupted during upgrades.

Region/Spot Beam	Rx Pol	ACU Freq(s)
ABS1 IOR/Asia	H	**1529**
AMC9 NA	H	**1701**
GE23 N. Pacific	V	**1333**
GE23 S.E. Pacific	V	No suitable alternates.
GE23 S.W. Pacific	V	**1100**
GE23 S. Pacific	H	No suitable alternates.
NSS7 Caribbean	V	**1681**
NSS7 Southern Cone	H	**1621**
Telstar11N US	H	No suitable alternates.
Telstar11N AOR	H	No suitable alternates.
Telstar11N W. Africa	H	No suitable alternates.
Satmex5 Continental	V	**1656**

Manually loading an Option file received via e-mail

Steps 2-1 - Saving Option File:

- **You may perform the following steps on any computer on the ships network that uses the WaveCall service for internet use. You do not need to make any network configuration changes.**
- When saving the option file in the email, it must maintain the .opt file extension.
  - Save as: **All files (*.*)**
- We recommend deleting all older option file you may have on hand, as they may have become outdated.
- You may download iSite8 from our FTP Site at ftp://ftp.vizada-usa.net/pub/SupportPage.htm look for the **Program: iSite12 - iDx3.0.0 (.zip)** link.
  - Download and unzip the iSite software into any folder location of your choice. Run iSite by clicking on iSite.exe

Steps 2- 2 - Logging in using iSite8:

1. Open up iSite and wait 15 seconds for iSite8 to auto detect a device. If one does not appear, select **File** then **New**.
2. Right click on the device that pops up. Select login from the menu box.
3. Type in your IP address: **10.xx.xx.xx**
4. Type in the password: **P@55w0rd!**
5. Select the **Admin** Radio button and **Secure Connection**.
6. Click on **OK**

Steps 2-3 - Loading the Option File:

1. Click on **Option File > Download from Disk** from the upper menu bar.
2. Clicking on this will take you to the Open window.
3. From here, find and select the option file provided for your modem in this email: **Name_S/N_Beam.opt**
4. Click on **Open - Yes - Reboot Now** to the boxes that pop up.
5. Please call the WaveCall Support Team when you make these changes so we can make the required changes here at the hub.

Steps 2-4

1. Continue with updating DAC settings, using **Step 8 on Page 2**.

Additional Steps and Instructions

Controlling a Multi-band Option File

1. Log into iSite as indicated in **Step 2 on Page 1**.
   - (Requires use of computer with telnet session enabled*[1].)
2. Click on **Configure** in the upper menu bar. Select Connect and click on **Telnet**.
3. This will open up a command prompt window.
4. Type in your username: **admin**
5. Type in the password: **P@55w0rd!**
6. Type the command **xoff** to stop the LATLONG sweeps. This command may need to be re-entered again after another command is used.
7. Type **beamselector list** - This will give you list of all beams and its associated **#** the modem is loaded with.
8. Type **beamselector switch # -f** - Where **#** is the number of the beam you want. The modem will reboot with the selected beams option file.
9. After modem resets (2-3 minutes), telnet back into the modem and type **beamselector lock** This will inhibit the out of network auto switching timer.
   - The modem will remain locked to that network until manually swapped with the above instructions or reset, in which the modem will start with the lowest numbered network first.

Beam Change Quick Check List

1. Have read all instructions: _____
2. Have all items ready for beam change: Hardware (LNB), iSite & Option file: _____
3. Have made LNB change (if necessary): **a.** -or- **b.** -or- **c.**
   - **a.** Single Band LNB swapped: _____
   - **b.** Dual Band LNB: _____
   - **c.** Quad Band LNB (DAC Volt/Tone changed): _____
4. Loaded Marlink Provided Option file: _____
5. Changed Satellite Tracking Frequency: _____
6. Changed Satellite (if necessary): _____
7. Changed TX POL (if necessary): _____
8. Called and informed WaveCall Help Desk of changes completed onboard vessel: _____

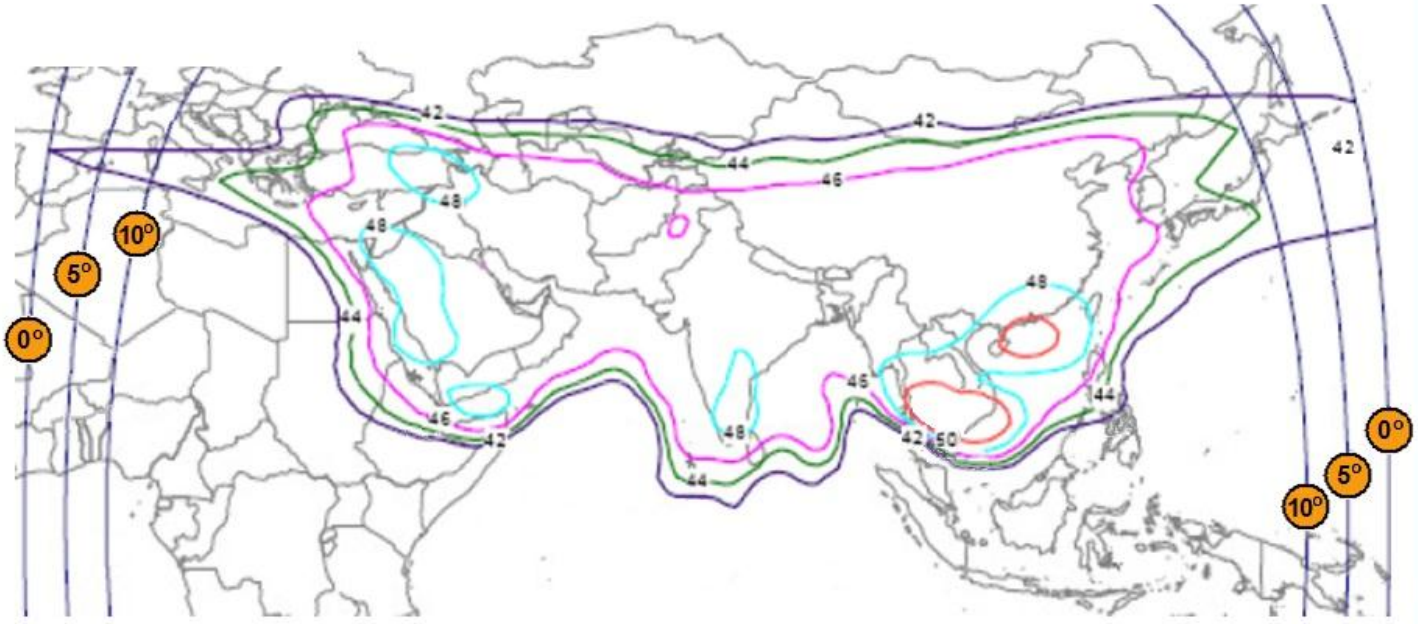
Beam Change Recommendations

Please visit our FTP site and download the ACU Settings Checklist and copy down your DAC settings BEFORE you make any changes and the settings saved once you are up in network. This will allow you and us to have a base line copy of settings in your DAC prior to the changeover and after the changeover. This can greatly assist in the troubleshooting of your system should you experience any issues during or after the changeover and help restore service to your vessel in a timely manner.

*[1] How to enabling telnet client in Windows 7 & Windows Vista. [Windows XP enabled by default]

- Start → Control Panel
- Programs and Features
- Turn Windows features on or off – (Click Yes if User Account Control pops up)
- Checkmark only the Telnet Client option
- Click OK

WaveCall™ by Marlink - ABS-1 South Asia / IOR



← Stronger Signal | Weaker Signal →

48 46 44 | 42

Limit of Coverage (15 Degrees or greater prefered) 10°

Questionable Service 5° 0°

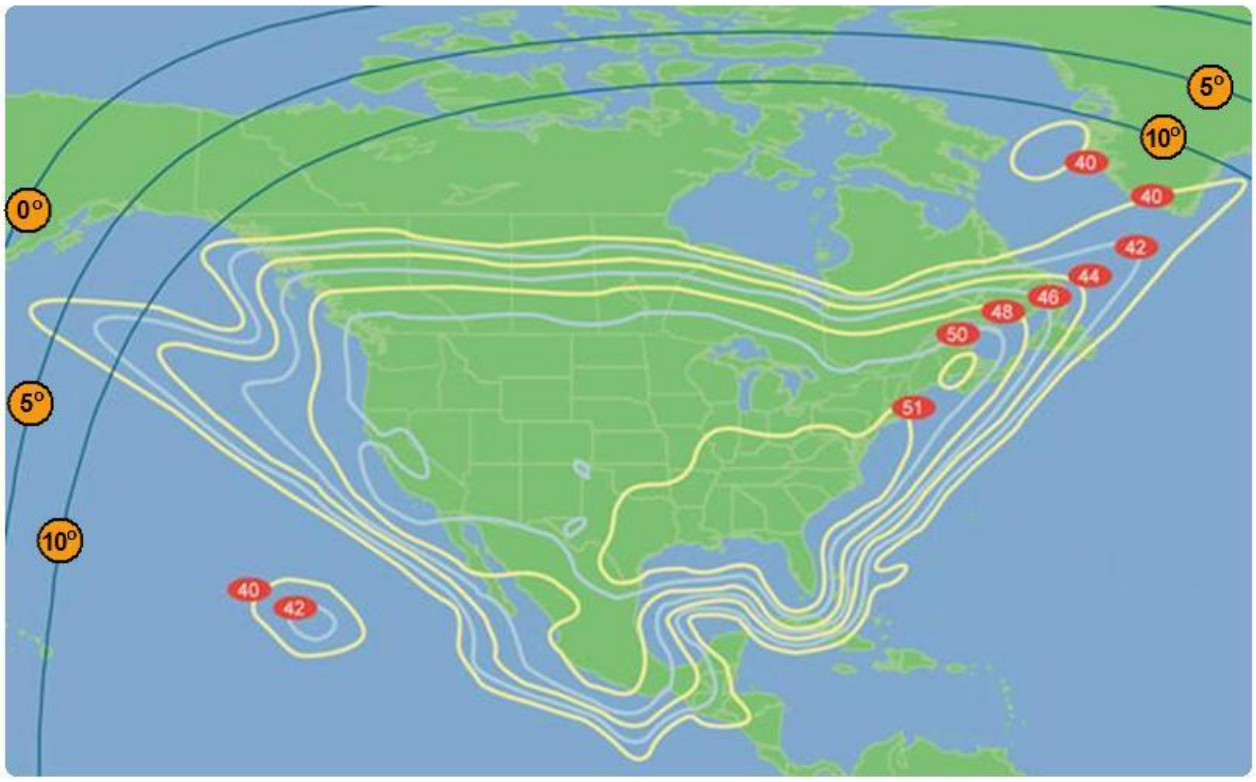
Elevation Constraints

Important Note: This coverage requires a Co-Pol Antenna Setup

Availability of service at the edge of coverage areas fluctuates depending on a variety of conditions.
The map depicts Marlink's expectations of coverage, but does not represent a guarantee of service.

ABS-1 @ 75°E - Ku Band - Hub Location: Hong Kong

WaveCall™ by Marlink - AMC-9 US



← Stronger Signal | Weaker Signal →

50 48 46 | 44 42

Limit of Coverage

10° (15 Degrees or greater prefered)

Questionable Service

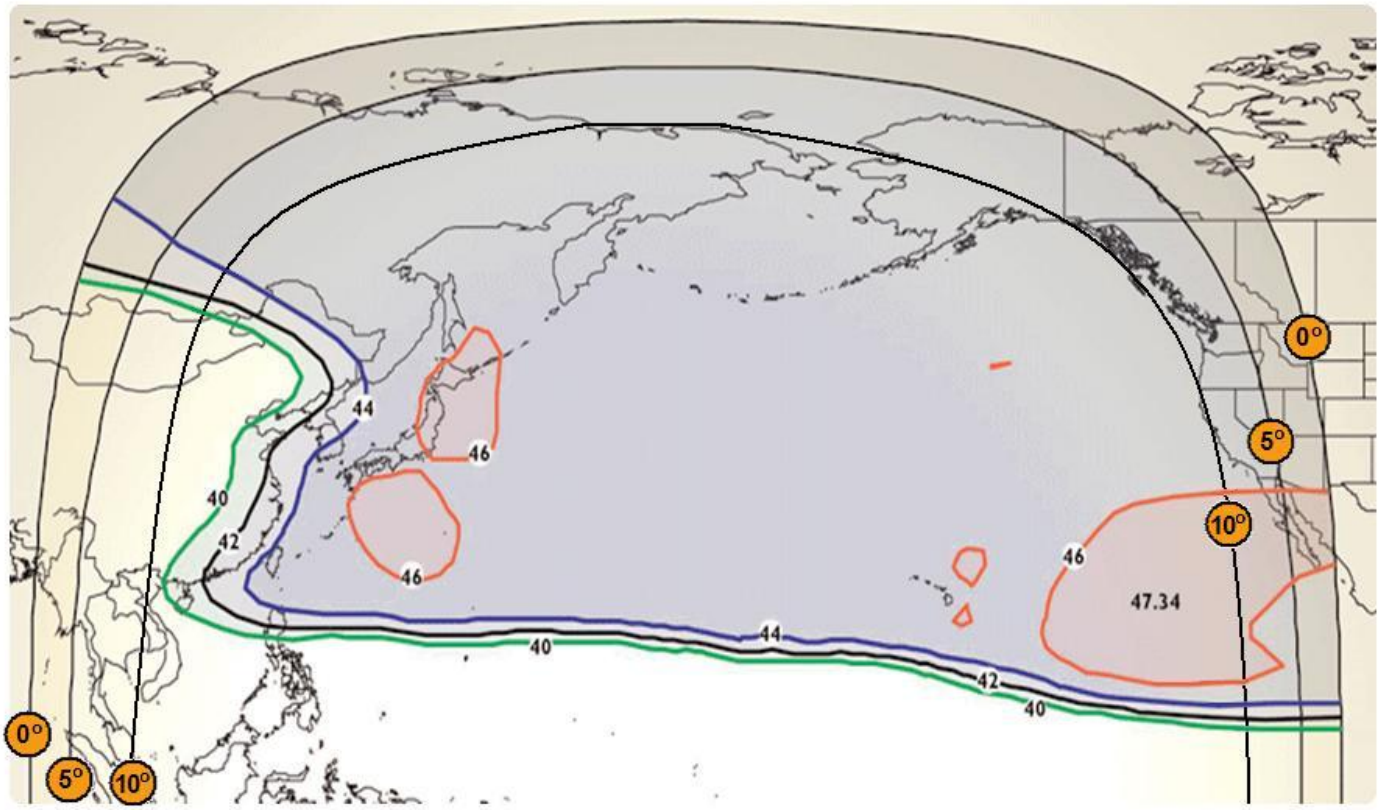
5° 0°

Elevation Constraints

Availability of service at the edge of coverage areas fluctuates depending on a variety of conditions.
The map depicts Marlink's expectations of coverage, but does not represent a guarantee of service.

AMC-9 @ 83°W - Ku Band - Hub Location: USA

WaveCall™ by Marlink - GE-23 North Pacific



← Stronger Signal | Weaker Signal →

46 45 44 43 | 42 40

Limit of Coverage (15 Degrees or greater prefered) 10°

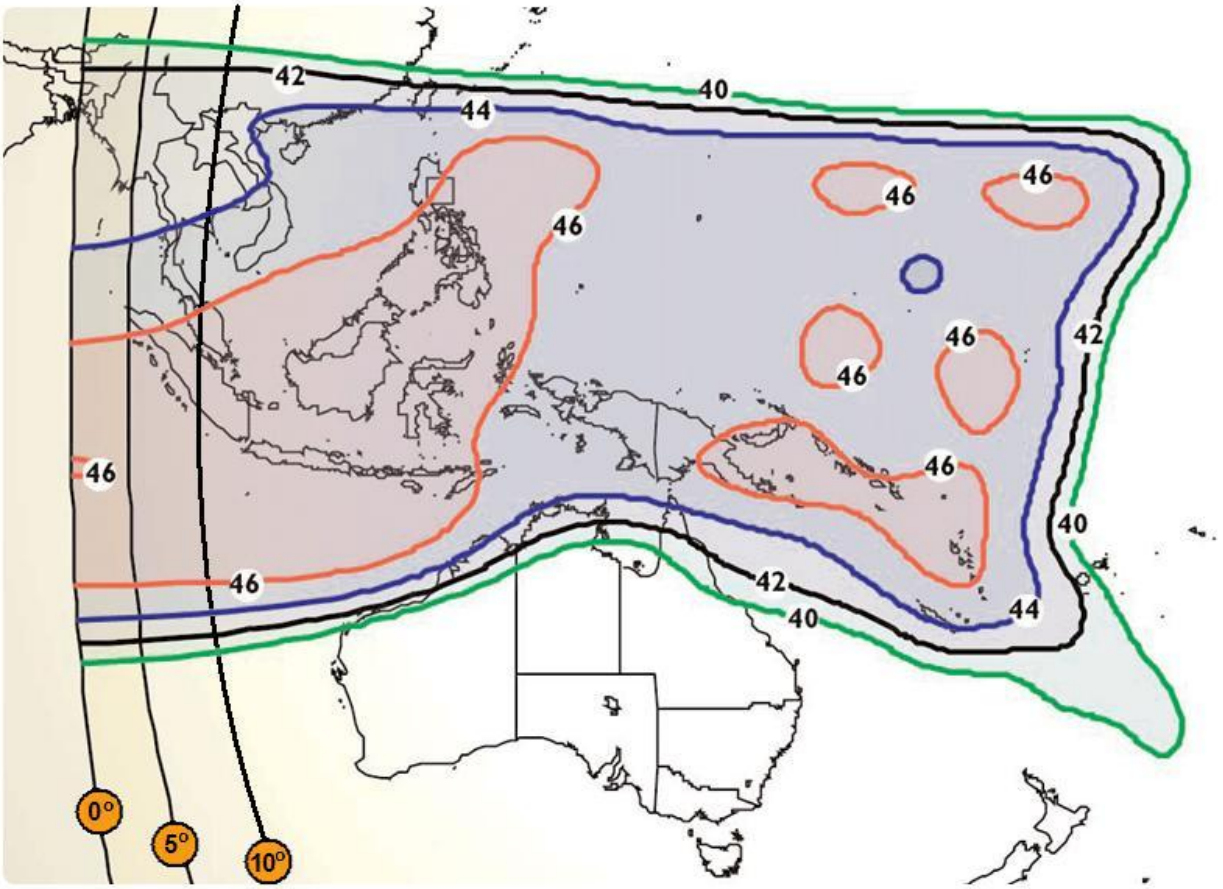
Questionable Service 5° 0°

Elevation Constraints

Availability of service at the edge of coverage areas fluctuates depending on a variety of conditions.
The map depicts Marlink's expectations of coverage, but does not represent a guarantee of service.

GE-23 @ 172°E - Ku Band - Hub Location: USA

WaveCall™ by Marlink - GE-23 SouthWest Pacific



← Stronger Signal | Weaker Signal →

46 45 44 43 | 42 40

Limit of Coverage (15 Degrees or greater prefered) 10°

Questionable Service 5° 0°

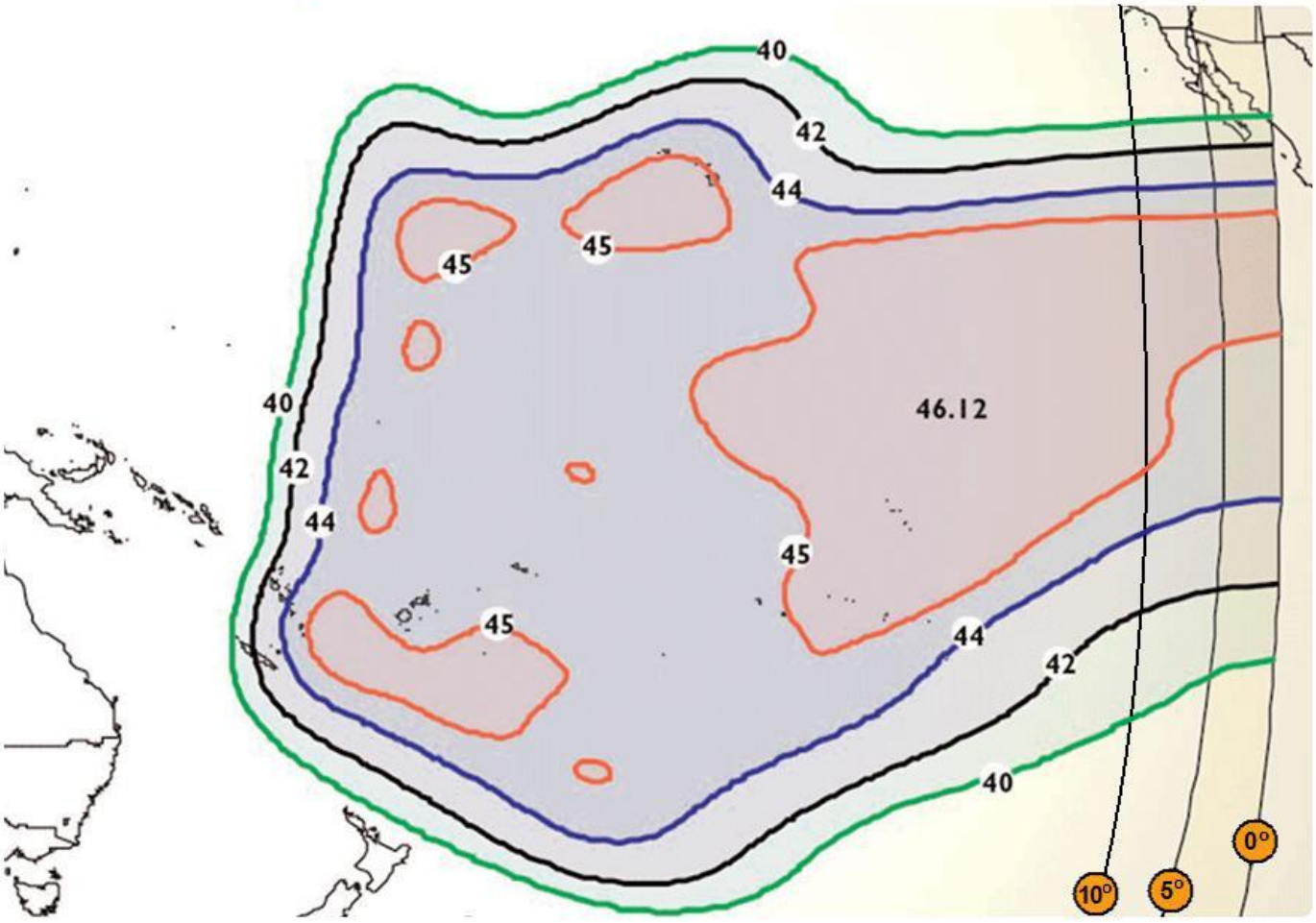
Elevation Constraints

Important Note: This coverage requires a Co-Pol Antenna Setup

Availability of service at the edge of coverage areas fluctuates depending on a variety of conditions.
The map depicts Marlink's expectations of coverage, but does not represent a guarantee of service.

GE-23 @ 172°E - Ku Band - Hub Location: USA

WaveCall™ by Marlink - GE-23 SouthEast Pacific



← Stronger Signal | Weaker Signal →

46 45 44 43 | 42 40

Limit of Coverage

(15 Degrees or greater prefered)

Questionable Service

5° 0°

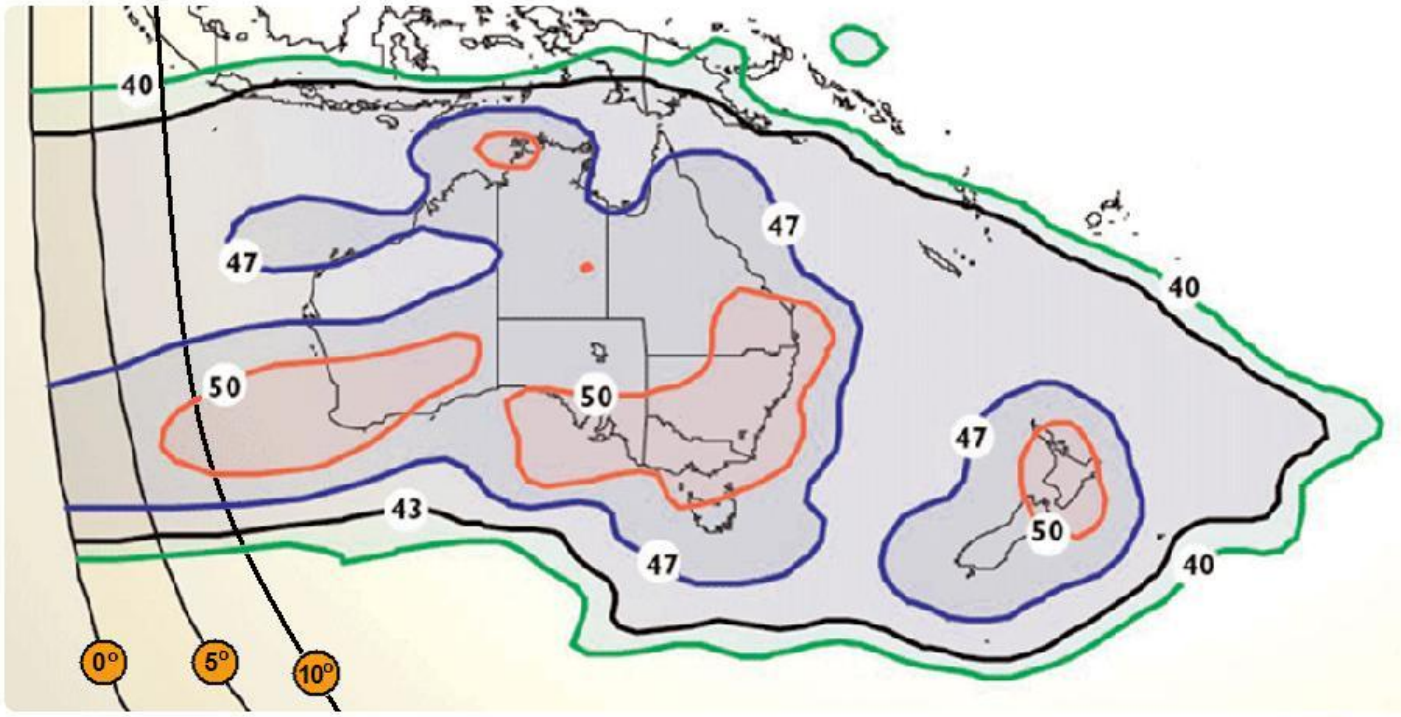
Elevation Constraints

Important Note: This coverage requires a Co-Pol Antenna Setup

Availability of service at the edge of coverage areas fluctuates depending on a variety of conditions.
The map depicts Marlink's expectations of coverage, but does not represent a guarantee of service.

GE-23 @ 172°E - Ku Band - Hub Location: USA

WaveCall™ by Marlink - GE-23 South Pacific



← Stronger Signal | Weaker Signal →

50 48 47 44 | 43 40

Limit of Coverage (15 Degrees or greater prefered) 10°

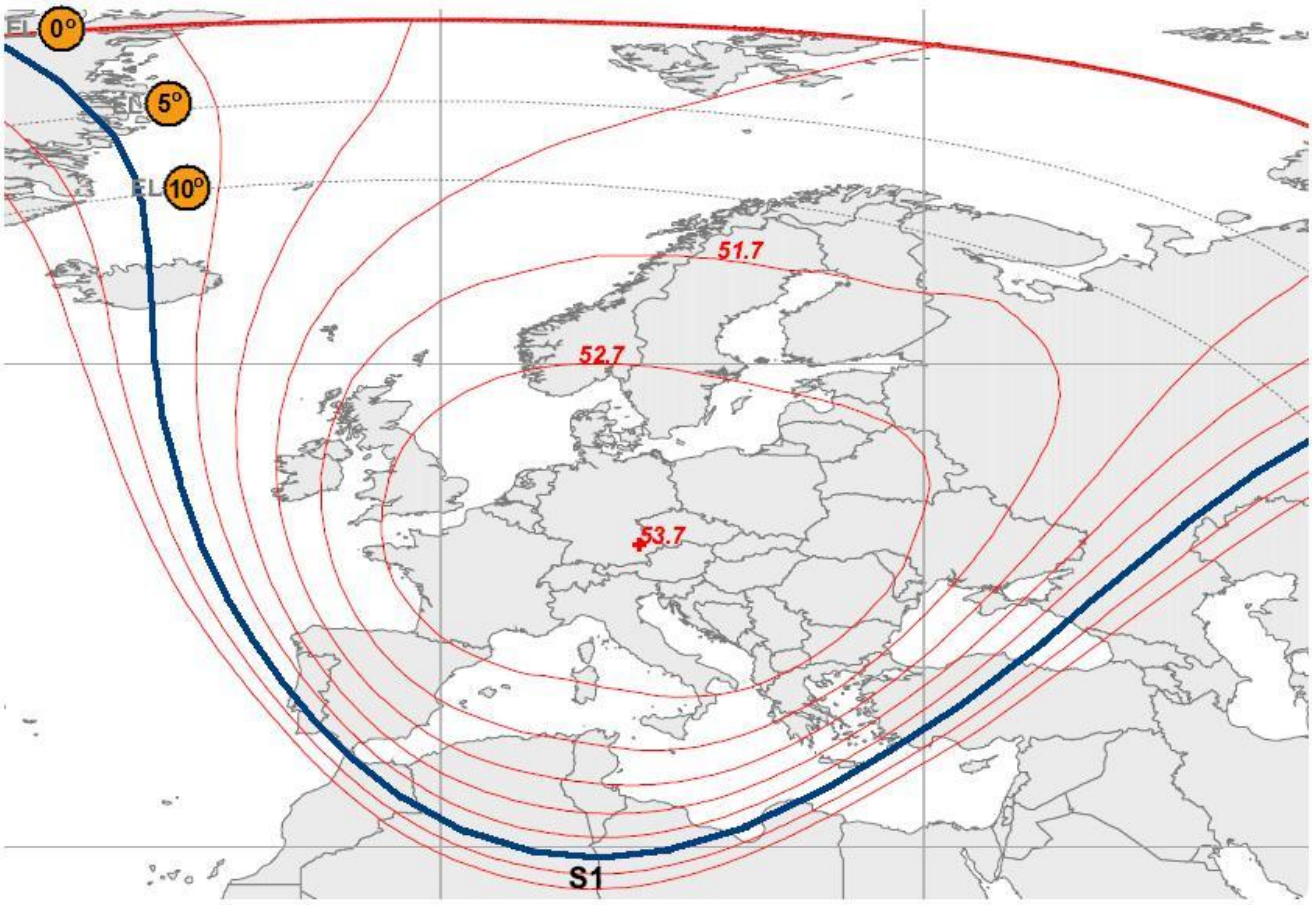
Questionable Service 5° 0°

Elevation Constraints

Availability of service at the edge of coverage areas fluctuates depending on a variety of conditions.
The map depicts Marlink's expectations of coverage, but does not represent a guarantee of service.

GE-23 @ 172°E - Ku Band - Hub Location: Australia

WaveCall™ by Marlink - IS-1002 S1 Europe



Expected Limit of Spot Beam Coverage

Limit of Coverage (15 Degrees or greater prefered) 10°

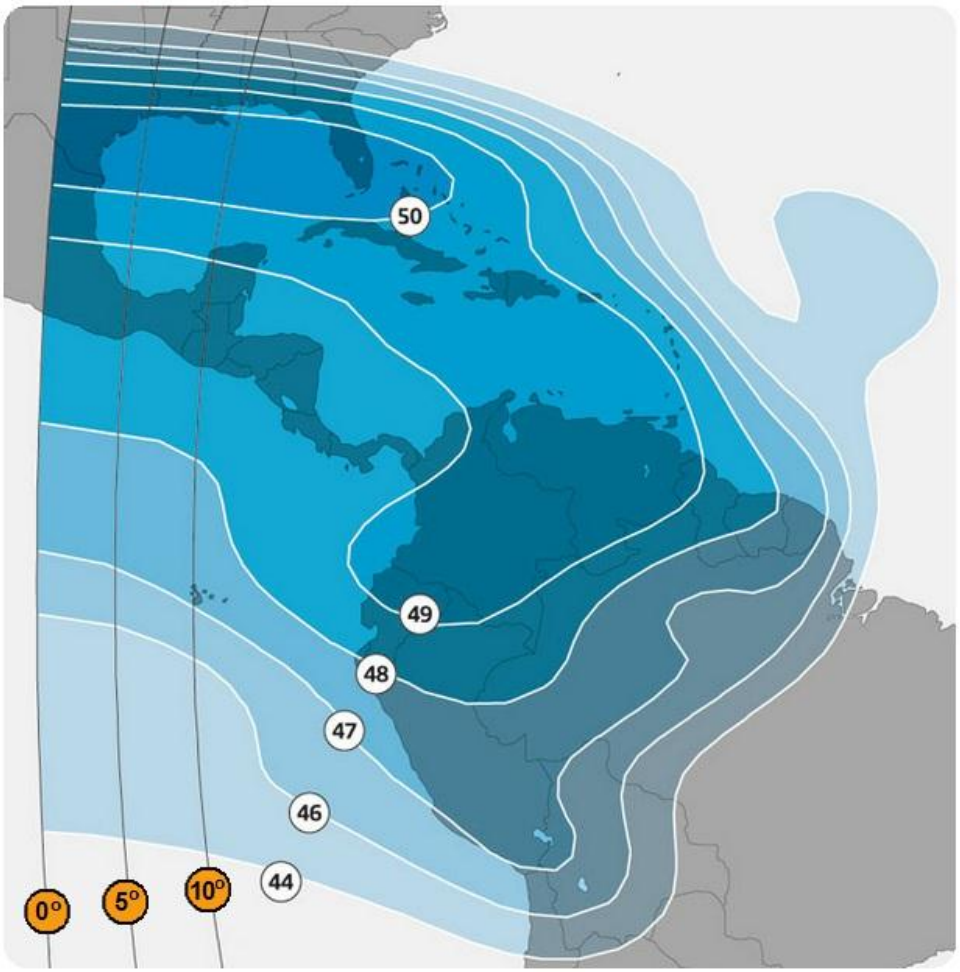
Questionable Service 5° 0°

Elevation Constraints

Availability of service at the edge of coverage areas fluctuates depending on a variety of conditions.
The map depicts Marlink's expectations of coverage, but does not represent a guarantee of service.

IS-10-02 @1°W - Ku Band - Hub Location: Norway

WaveCall™ by Marlink - NSS7 Caribbean Andes



← Stronger Signal | Weaker Signal →

50 49 47 | 44

Limit of Coverage

10° (15 Degrees or greater prefered)

Questionable Service

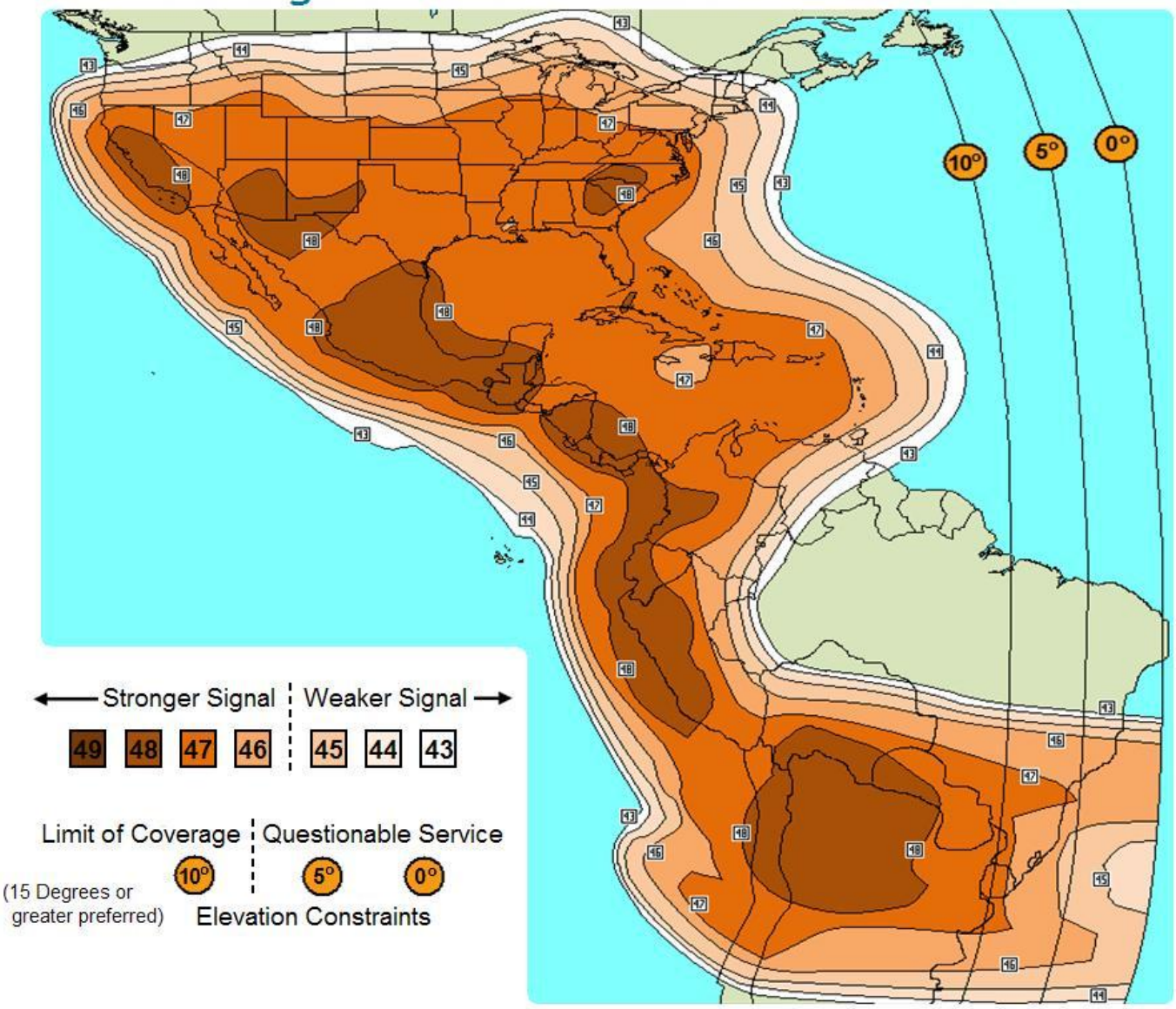
5° 0°

Elevation Constraints

Availability of service at the edge of coverage areas fluctuates depending on a variety of conditions.
The map depicts Marlink's expectations of coverage, but does not represent a guarantee of service.

NSS7 22°W - Ku Band - Hub Location: USA

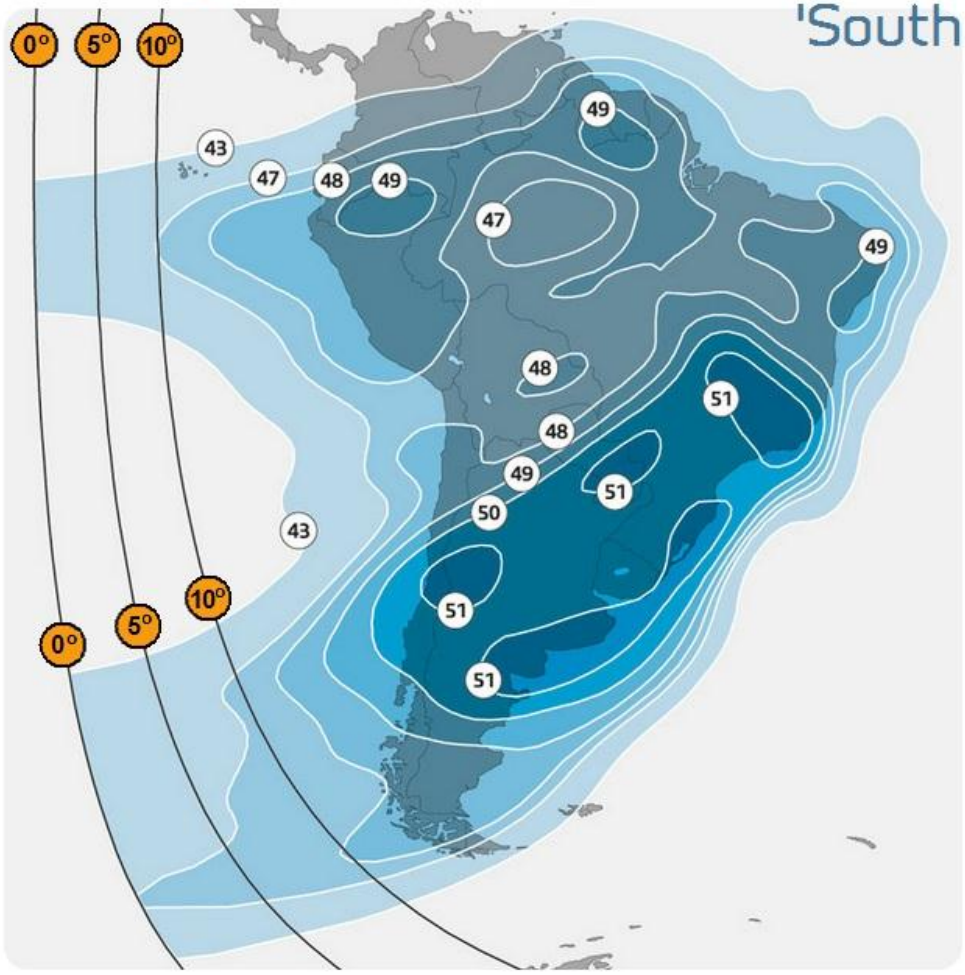
WaveCall™ by Marlink - Satmex5 Continental



Availability of service at the edge of coverage areas fluctuates depending on a variety of conditions.
The map depicts Marlink's expectations of coverage, but does not represent a guarantee of service.

Satmex5 @ 116.8°W - Ku Band - Hub Location: USA

WaveCall™ by Marlink - SES4 Southern Cone 'South America'



← Stronger Signal | Weaker Signal →

50 49 47 | 43

Limit of Coverage (15 Degrees or greater prefered) 10°

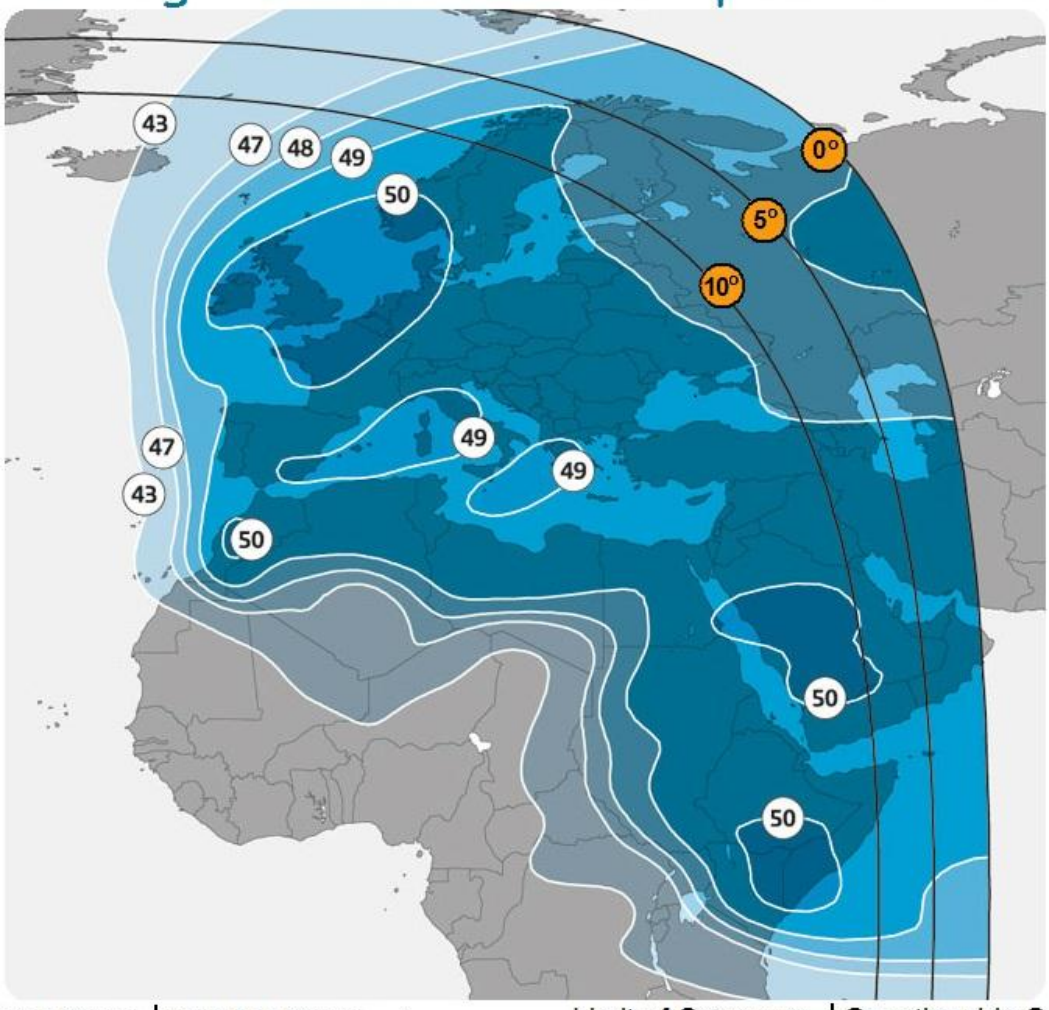
Questionable Service 5° 0°

Elevation Constraints

Availability of service at the edge of coverage areas fluctuates depending on a variety of conditions.
The map depicts Marlink's expectations of coverage, but does not represent a guarantee of service.

SES4 @ 22°W - Ku Band - Hub Location: USA

WaveCall™ by Marlink - SES4 European & Middle East



← Stronger Signal | Weaker Signal →

50 49 47 | 43

Limit of Coverage (15 Degrees or greater prefered) 10°

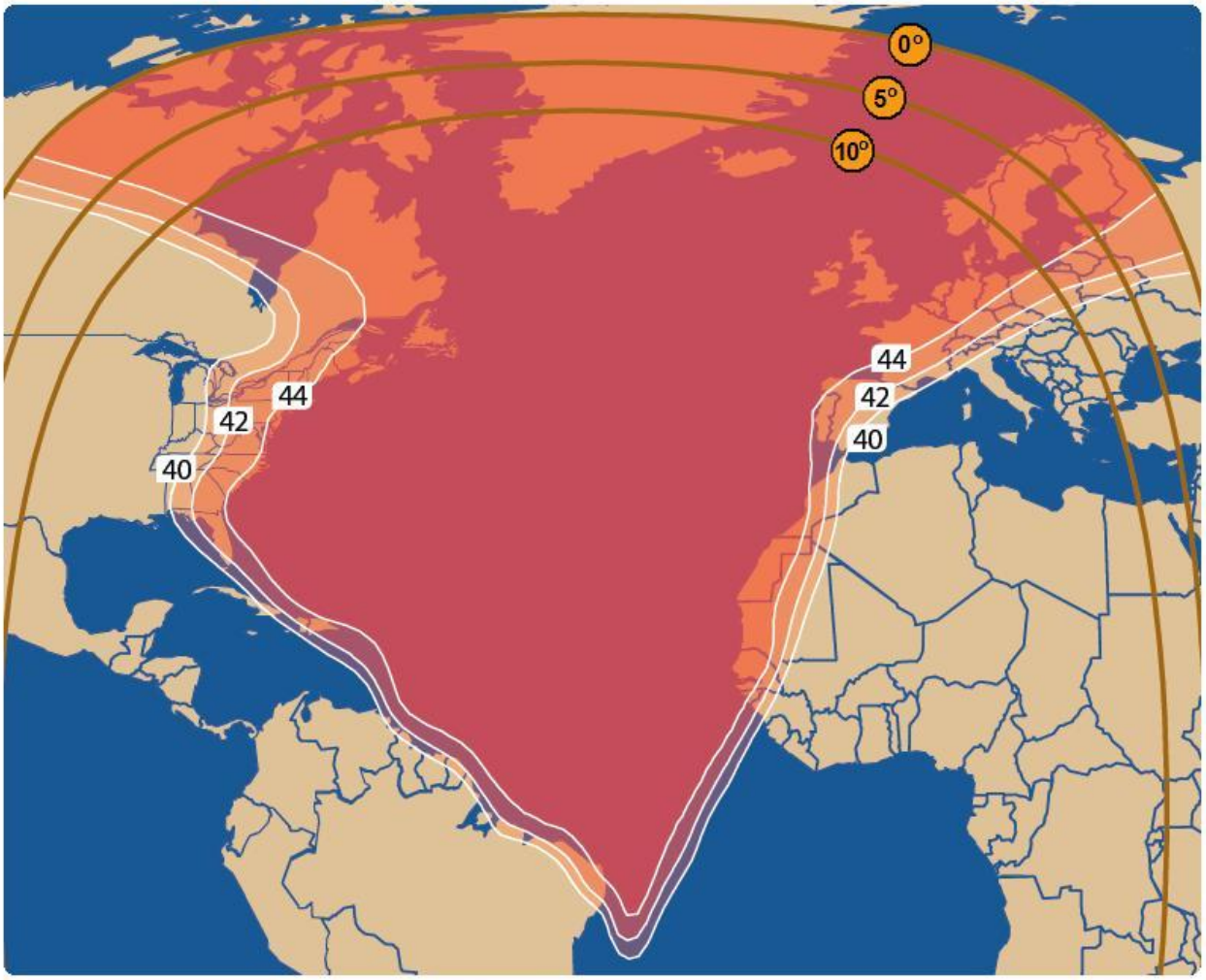
Questionable Service 5° 0°

Elevation Constraints

Availability of service at the edge of coverage areas fluctuates depending on a variety of conditions.
The map depicts Marlink's expectations of coverage, but does not represent a guarantee of service.

SES4 @ 22°W - Ku Band - Hub Location: USA

WaveCall™ by Marlink - T11N Atlantic Ocean



← Stronger Signal | Weaker Signal →

44 42 40

Limit of Coverage | Questionable Service

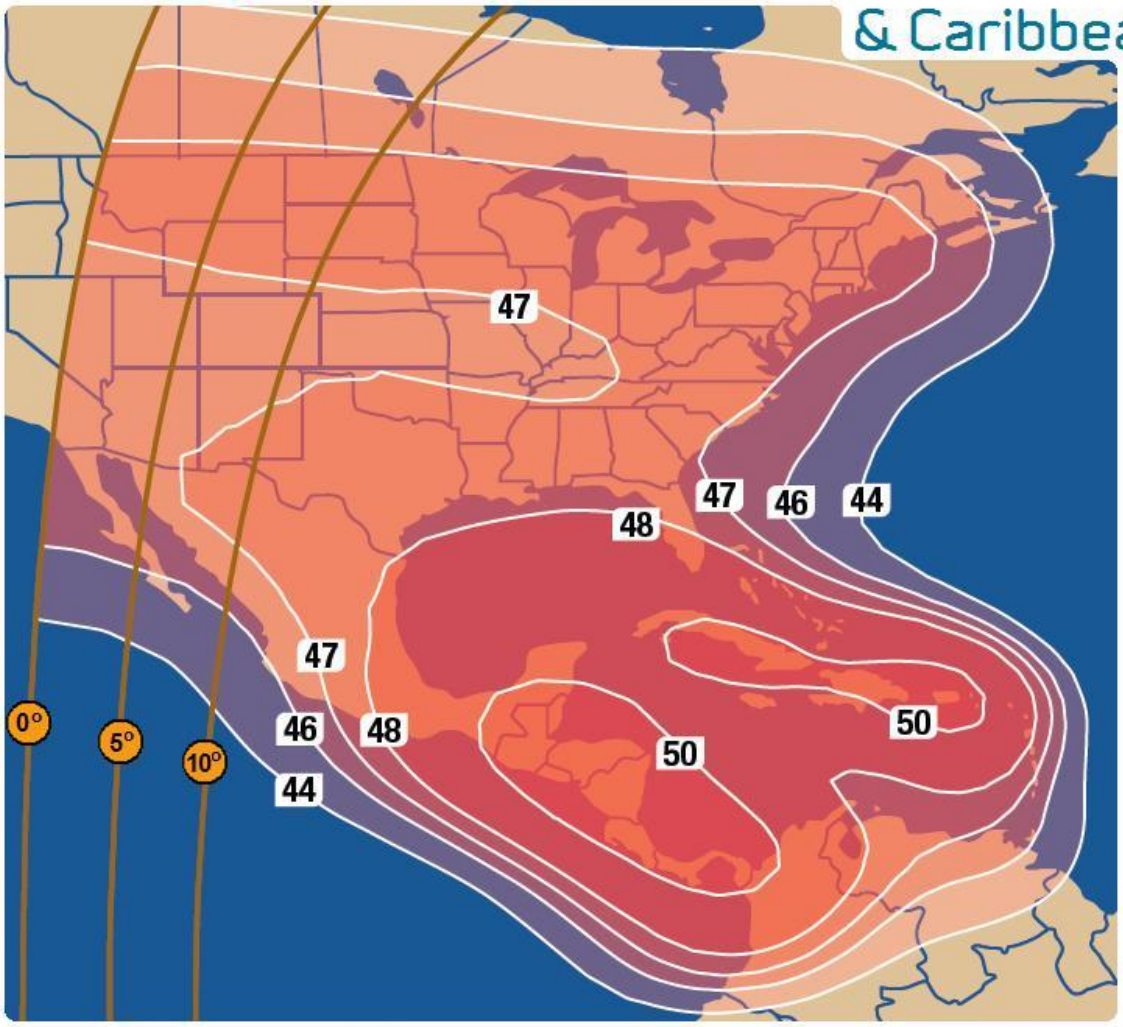
(15 Degrees or greater preferred) 10° 5° 0°

Elevation Constraints

Availability of service at the edge of coverage areas fluctuates depending on a variety of conditions.
The map depicts Marlink's expectations of coverage, but does not represent a guarantee of service.

T11N 37.5°W - Ku Band - Hub Location: USA

WaveCall™ by Marlink - T11N United States & Caribbean



← Stronger Signal | Weaker Signal →

50 48 47 46 | 45 44

Limit of Coverage (15 Degrees or greater preferred) 10°

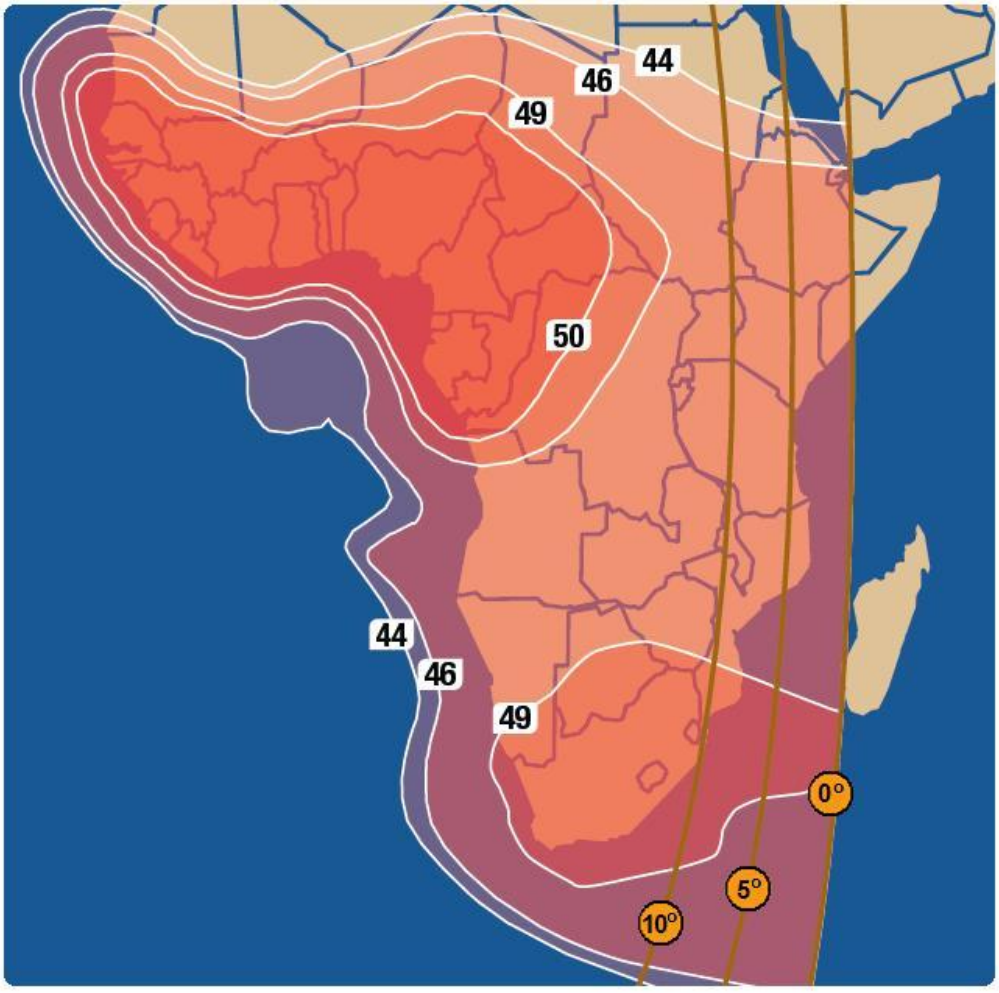
Questionable Service 5° 0°

Elevation Constraints

Availability of service at the edge of coverage areas fluctuates depending on a variety of conditions.
The map depicts Marlink's expectations of coverage, but does not represent a guarantee of service.

T11N 37.5°W - Ku Band - Hub Location: USA

WaveCall™ by Marlink - T11N West Africa



← Stronger Signal | Weaker Signal →

50 49 47 46 | 45 44

Limit of Coverage (15 Degrees or greater preferred) 10° | Questionable Service 5° 0°

Elevation Constraints

Availability of service at the edge of coverage areas fluctuates depending on a variety of conditions.
The map depicts Marlink's expectations of coverage, but does not represent a guarantee of service.

T11N @ 37.5°W - Ku Band - Hub Location: USA

A View of WaveCall *by Marlink* Global Area Coverage