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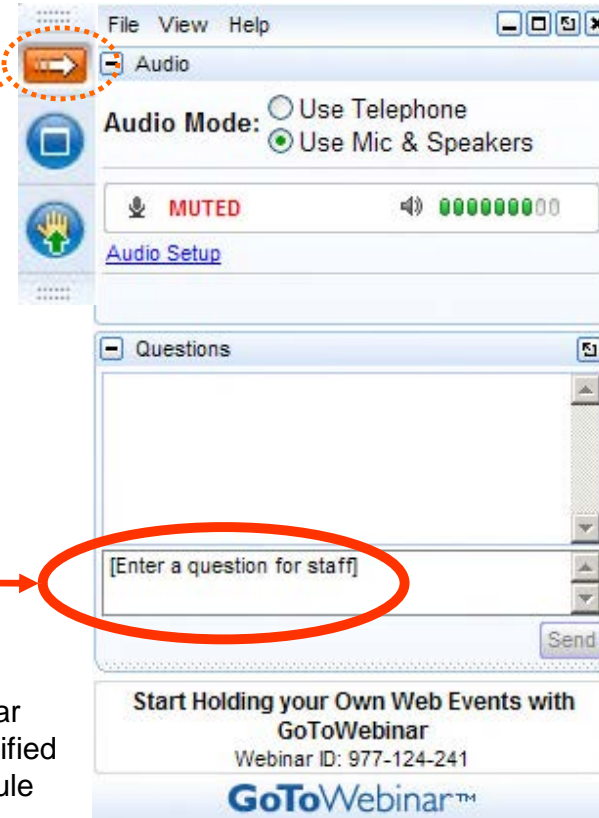
# STLs

## Moving Signals From Here to There

# Your questions please?

(if you don't see the control panel, click on the orange arrow icon to expand it)

Please enter your questions in the text box of the webinar control panel (remember to press send)



Remember: The completion of a Nautel webinar qualifies for ½ SBE re-certification credit, identified under Category I of the Re-certification Schedule for SBE Certifications.



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# Ideas for things to cover

- Licensed vs unlicensed
  - Benefits
  - Drawbacks
- Wired vs wireless
  - Can I get from here to there?
  - What kind of wireless?
    - LTE
    - PTP
- Range vs Bandwidth
  - Frequency vs both
- Other items
  - Inversions
  - Ground Cover
  - Fresnel Zone







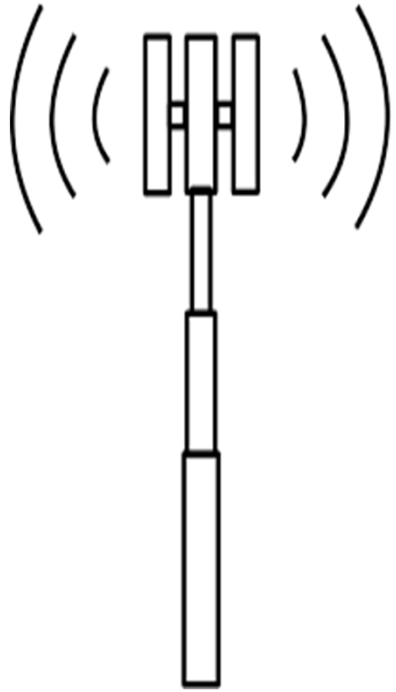
## PTP Diplexed vs PTP dedicated





## PTP Unlicensed vs PTP Licensed





## LTE vs PTP vs Wireline (T1,DSL,Cable)





## Consumer LTE vs Prioritized LTE





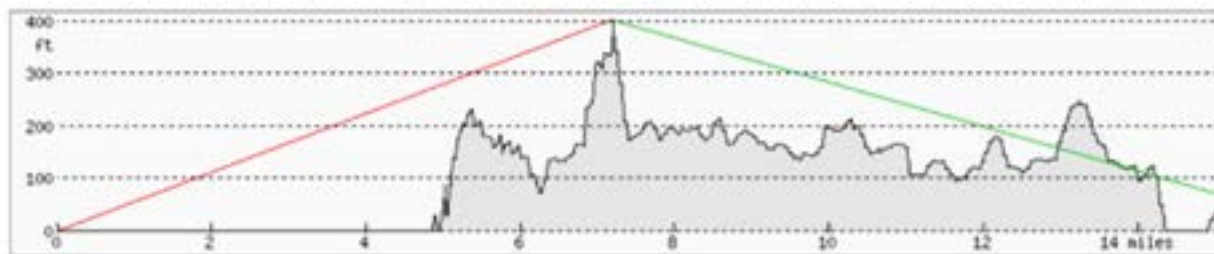
# Questions to ask

- Does it need to be bi-directional?
- What is the point to point distance?
- Is there line of site?
- Is data transmission required?
- What bandwidth is needed?
- Do we need more gain?
- Is there such a thing as too much signal?



<https://store.ui.com/collections/operator-airmax-and-ltu/products/monsterdish>





Parameters

[Show profile 2](#)

English  Metric   
 Decimal places (0-6)    
 DD.DDDDDD°  DD° MM.MMMM'  DD° MM' SS.SS"



Find:

[Draw profiles](#)

[Clear](#) [Backspace](#) [Checkpoint](#)

follow driving route  show grade

show rise/fall  include grade in distance

Bearings are true, not magnetic

44.575256° N 64.207237° W 0 ft

119° 7.2 miles 7 total

44.525324° N 64.07905° W 404 ft

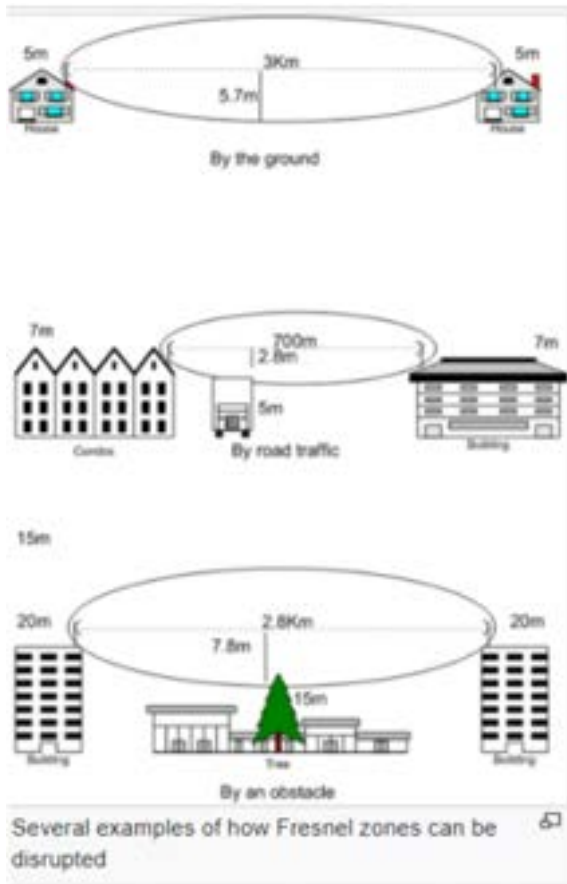
6° 7.9 miles 15 total

44.639264° N 64.061155° W 66 ft

44.671023° N 64.088526° W

<http://www.heywhatsthat.com/profiler.html>





A **Fresnel zone** ([/freiˈnɛl/](#) *fray-NEL*), named after physicist Augustin-Jean Fresnel, is one of a series of confocal prolate ellipsoidal regions of space between and around a transmitter and a receiver. Transmitted radio, sound, or light waves can follow slightly different paths before reaching a receiver, especially if there are obstructions or reflecting objects between the two. The waves can arrive at slightly different times and will be slightly out of phase due to the different path lengths. Depending on the magnitude of the phase shift, the waves can interfere constructively or destructively. The size of the calculated Fresnel zone at any particular distance from the transmitter and receiver can help to predict whether obstructions or discontinuities along the path will cause significant interference.

Source – Wikipedia (Fresnel zone)



## RF Toolkit



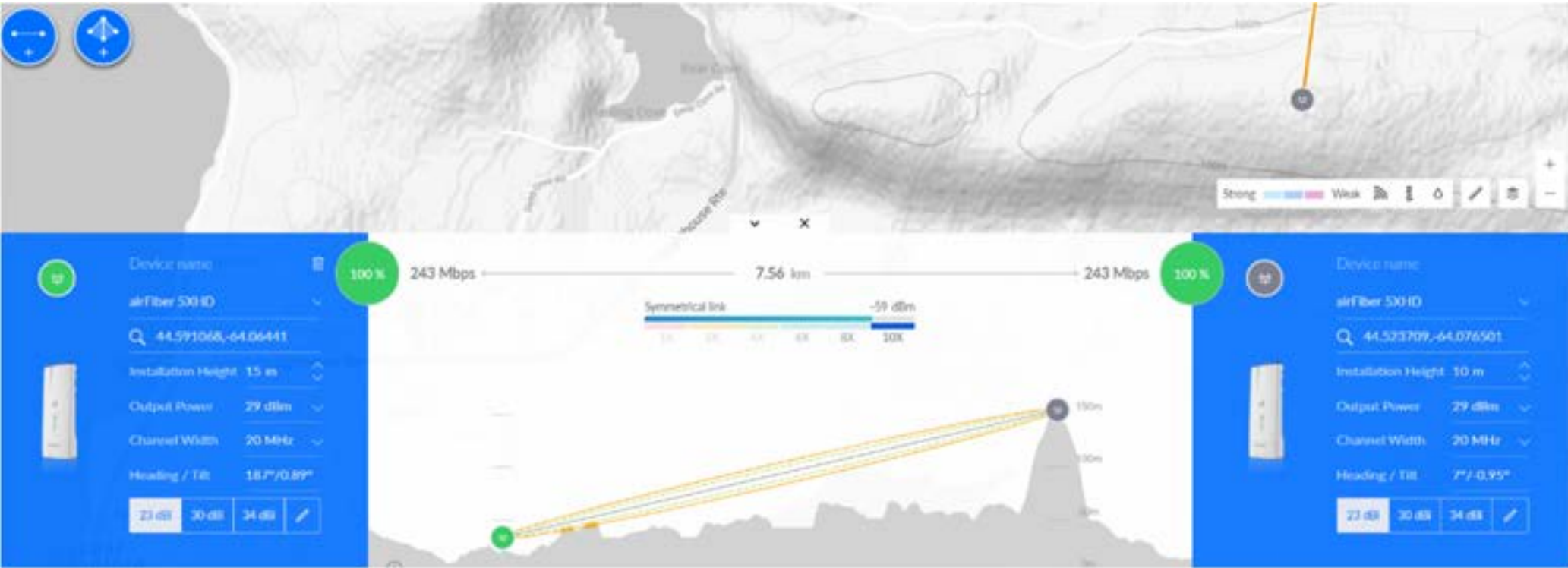
### Radio Coverage Tool

How far is your transmitter going to go? What happens if you change transmitter power, antenna location, or antenna height and gain?

Use this handy tool to create colorful maps using different test scenarios.

*(Create your FREE NUG account for access)*





**New Link**

From    
 Antenna center height (m)

To    
 Antenna center height (m)

Description

Frequency (MHz)

Tx power (Watts)

Tx line loss (dB)

Tx antenna gain (dBi)

Rx antenna gain (dBi)

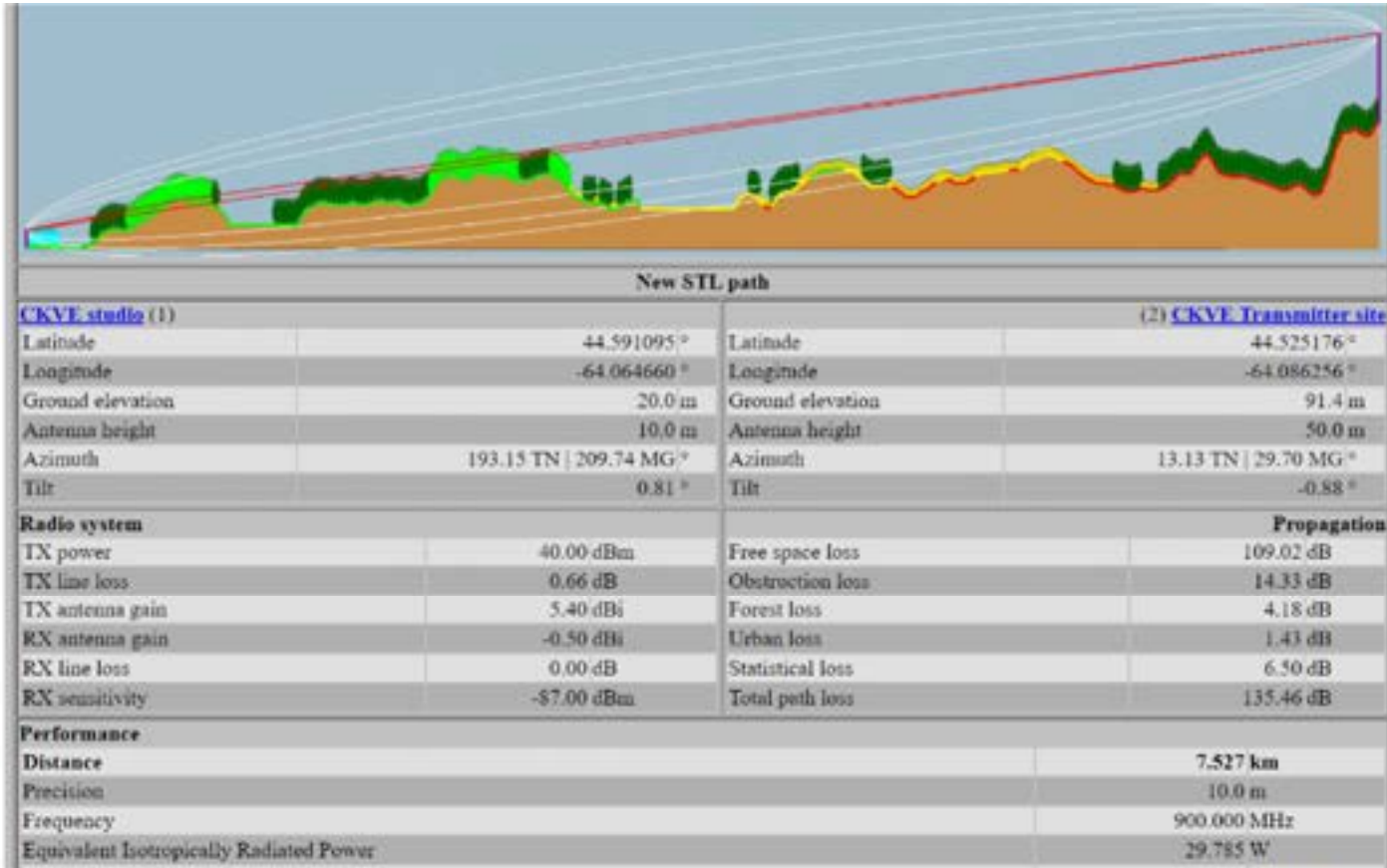
Rx line loss (dB)

Rx threshold ( $\mu$ V)

Required reliability (%)

Use land cover

Use two rays



<http://support.nautel.com/rf-toolkit/radio-coverage-tool/>



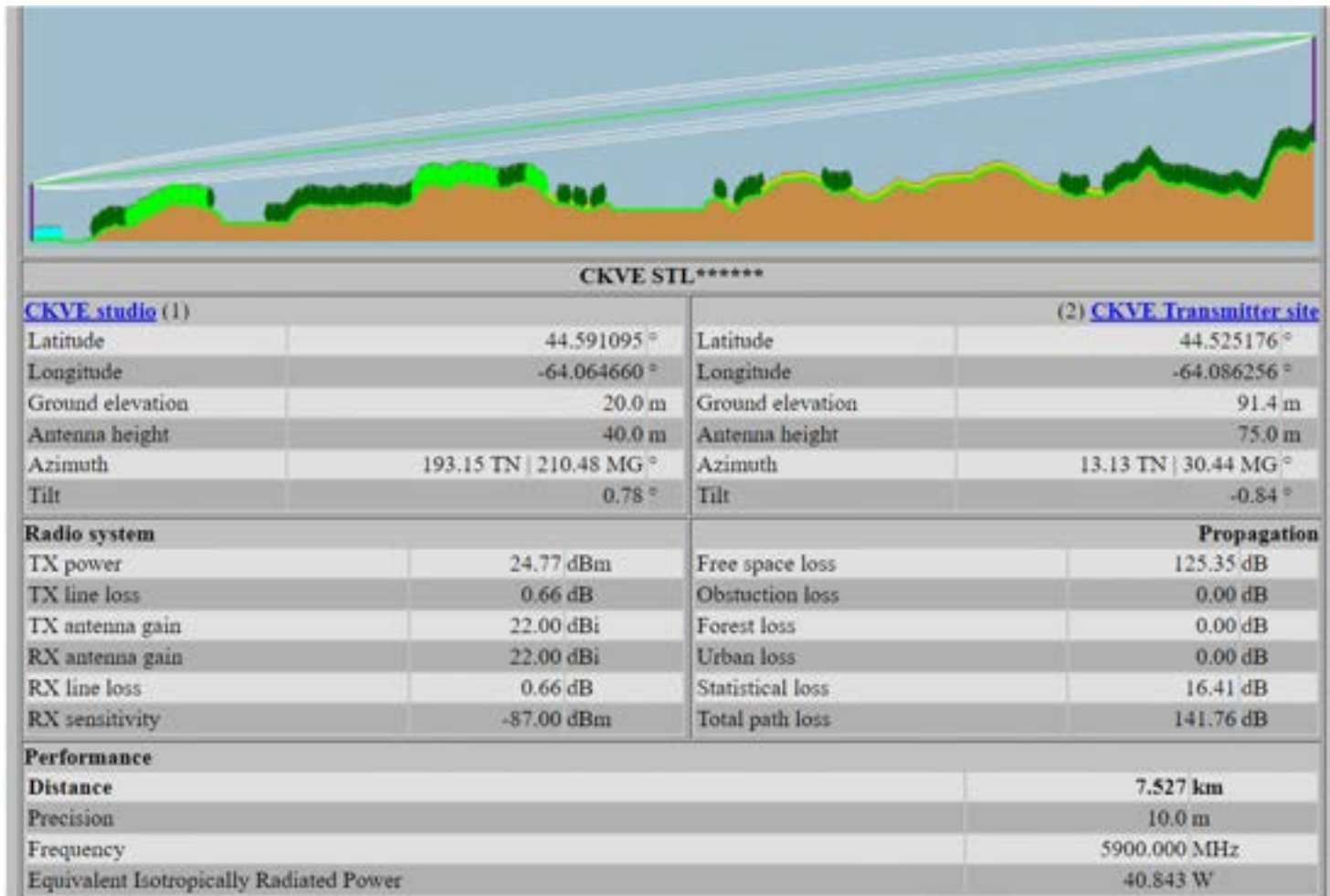
[Add to my links](#)
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[Return to main menu](#)



**CKVE STL\*\*\*\*\***

<a href="#">CKVE studio (1)</a>		<a href="#">(2) CKVE Transmitter site</a>	
Latitude	44.591095 °	Latitude	44.525176 °
Longitude	-64.064660 °	Longitude	-64.086256 °
Ground elevation	20.0 m	Ground elevation	91.4 m
Antenna height	40.0 m	Antenna height	75.0 m
Azimuth	193.15 TN   209.74 MG °	Azimuth	13.13 TN   29.70 MG °
Tilt	0.78 °	Tilt	-0.84 °





<http://support.nautel.com/rf-toolkit/radio-coverage-tool/>





# MAXXKONNECT

www.maxxconnectwireless.com

## WIRELESS

*Prioritized, High Speed LTE Internet designed for Transmitter Sites & Remotes*

- Data is pooled on like plans to create an aggregate data cap which helps avoid overage charges.
- **Commercial class service. Higher QOS and prioritization on the LTE network!**
- **Static IP address** provided with EVERY access point at no extra charge!
- **No contracts**—cancel anytime with 30 days written notice.
- We use Cradlepoint M2M-class routers – no proprietary hardware!
- **No port blocking** or restrictions on what you can do.
- **VPN capable.** Compatible with Cisco, SonicWall and others!
- We can provide external antennas - omni or directional - to get connectivity even at remote sites!



www.bohnbroadcast.com  
844-549-2646



# Still need a POTS line?

# MAXXPHONE

*by MaxxKonnnect*

- An inexpensive VoIP to POTS solution that works with your MaxxKonnnect Wireless service – or any internet connection!
- DTMF works with most common dialup site remote controls including Burk, Circuitwerkes, Broadcast Tools and others.
- Allows you to eliminate costly and often problematic copper lines to sites!

**MAXXKONNECT**  
www.maxxkonnnectwireless.com WIRELESS



# Online Information



## **Webinars**

<https://www.nautel.com/resources/webinars/>



## **Nautel Waves Newsletter**

<https://www.nautel.com/newsletters/>



## **YouTube**

<http://www.youtube.com/user/NautelLtd>



## **Online Info, such as the Broadcasters' Desktop Resource**

<https://www.thebdr.net/>



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# THANK YOU!

