

Before the
FEDERAL COMMUNICATIONS COMMISSION
 Washington, DC 20554

In the Matter of)

CHANNEL 51 OF SAN DIEGO, INC.)

Application No. 0000052518

Displacement Application for LPTV)
 Station K12PO, Temecula, California)

Accepted / Filed

JUN 26 2019

To: Office of the Secretary
 Attn: Chief, Media Bureau

Federal Communications Commission
 Office of the Secretary

OPPOSITION TO PETITION TO DENY

Channel 51 of San Diego, Inc. ("Applicant"), by its attorneys, hereby submits its opposition to the Petition to Deny ("Petition") submitted by the County of Los Angeles ("LA County") on May 30, 2019 in the above-captioned matter.

I. BACKGROUND.

Applicant has been the licensee of LPTV station K12PO since February 2004. The station has been rebroadcasting the programming of Applicant's full-power station KUSI-TV, San Diego, California and providing residents of the Temecula area with a free, over-the-air means of viewing KUSI-TV. The Temecula area is in a terrain-blocked valley and residents there do not receive over-the-air signals from the Los Angeles TV stations.

Although Temecula is in Riverside County, which is in the Los Angeles DMA, the Temecula area has become a bedroom community for northern San Diego County's labor pool. Many residents of the Temecula area commute to the San Diego area for employment. In

addition, the Temecula area has many residents who are retired and living on fixed incomes, and who might prefer free over-the-air television rather than pay TV service.

KUSI-TV is an independent station that focuses on programming of interest to residents of the San Diego area, including locally-produced news. KUSI-TV produces and broadcasts 62.5 hours of local news each week, as well as a one-half hour weekly community affairs program. If there is an emergency situation in the area, KUSI-TV is in the unique position of being an independent station that can broadcast news of local events as they are occurring, without the constraints of a network affiliation agreement. Most, if not all, of this programming is of interest to residents of the Temecula area.

As a result of the Commission's repack of the broadcast television band, a full-power TV station, KDOC-TV, Anaheim, California, had to change its over-the-air signal to channel 12. Therefore, Applicant filed its present application ("Application") during the 2018 filing window for displacement applications, proposing to move the station to channel 15. The Application was submitted on April 11, 2018 and listed on public notice as accepted for filing on April 16, 2018.¹

KDOC-TV implemented its repack channel change in March 2019. At that point, K12PO had to go off the air. Grant of the Application will allow Applicant to return its LPTV station to the air and restore the station's free, over-the-air broadcast service to viewers in the Temecula area.

II. LA COUNTY'S PETITION SHOULD BE DISMISSED AS LATE-FILED OR, AT MOST, TREATED AS AN INFORMAL OBJECTION.

As stated above, Applicant filed the Application on April 11, 2018 and the Application was on public notice as accepted for filing on April 16, 2018. Subsequently, the Media Bureau issued two additional public notices regarding the Application – one on September 17, 2018 and

¹ Public Notice of Broadcast applications, Report No. 29215, April 16, 2018.

one on April 10, 2019. In addition, on April 15, 2019, counsel for Applicant sent LA County's attorney, by email, a copy of Applicant's April 4, 2019 amendment to the Application.

Despite these multiple notices, going back more than a year, LA County did not submit its Petition until May 30, 2019.

Section 73.3584(c) of the Commission's rules states: "Untimely Petitions to Deny, as well as other pleadings in the nature of a Petition to Deny, ... are subject to return by the FCC's staff without consideration." As the Commission has stated on numerous occasions, parties should not wait until an application is about to be granted and then submit late objections.² Thus, the Petition should be dismissed. Or, if the Media Bureau determines to take into account LA County's arguments, the Petition should be treated as an informal objection.

III. APPLICANT'S PROPOSED FACILITIES WILL NOT CAUSE INTERFERENCE TO LA COUNTY'S OPERATIONS.

LA County claims that Applicant's proposed facility will cause significant interference to LA County's public safety operations.³ In support of this claim, LA County includes an interference analysis prepared by Pericle Communications (the "Pericle Study"), which finds that "[h]armful interference is a strong possibility."⁴ These assertions are simply erroneous.

Attached hereto as Exhibit A is an Engineering Statement prepared by Communications Technologies, Inc. (the "CTI Study") in response to the Pericle Study. Most importantly, the CTI Study finds that even if a point-to-point interference model is appropriate for assessing potential interference between LPTV and high site land mobile radio facilities, as the Pericle Study asserts, this model, when properly applied, shows that interference is unlikely to occur. In

² See Scott Malcolm, 33 FCC Rcd 2410, 2412 ¶ 8 (2018). See also Falmouth Broadcasting Co., 23 FCC 2d 293, 296 ¶ 7 (1970).

³ Petition at 3.

⁴ Pericle Study at 1.

particular, when the model is applied to the one site modeled in the Pericle Study (“Mt. Disappointment”), the CTI Study finds that the Applicant’s signal would be “30.2 dB under the noise floor and 24.2 dB under the -106.2 dBm level set by Pericle as [the threshold for] de minimis interference.”⁵ The difference in these values is attributable to the fact that the Pericle Study did not specify a value for Fresnel zone loss (the CTI study specifies a value of 10 dB), and erroneously applied the full ERP of Applicant’s proposed facility instead of adjusting the ERP for the 25 kHz land mobile bandwidth.⁶ Accordingly, the flawed analysis in the Pericle Study does not support the interference claim made in the Petition and should be disregarded.

LA County also makes numerous meritless claims of potential interference that do not warrant extensive consideration. For example, LA County’s reference to “a tortious history of interference from television stations to ... land mobile radio stations” is antiquated and misplaced. LA County’s references cover a time from 1984 to 1991, when TV broadcasts were analog only and land-mobile receivers lacked the selectivity and interference reduction capabilities of today’s systems.⁷ Indeed, in 1997, the Commission adopted standards for digital broadcast TV interference to land-mobile facilities. Applicant is aware of these standards and has employed appropriate filtering in its transmission system design to address any potential issues with adjacent channel interference.

With regard to potential co-channel interference, the engineering study submitted with Applicant’s amended application and the CTI Study attached hereto clearly demonstrate that no interference will be caused to LA County’s system – even using Pericle’s preferred methodology. Moreover, Applicant’s proposed operations will not worsen any interference

⁵ CTI Study at 5.

⁶ CTI Study at 5.

⁷ CTI Study at 2.

being caused to the County's operations by Mexican TV station XHTJB as the Petition suggests. Applicant's revised antenna pattern will direct less than 10 percent of the ERP that station XHTJB directs at the County's Channel 15 locations, and Applicant's proposed site is in a valley with significant terrain obstructions that shield it from LA County. By contrast, station XHTJB operates from a tower nearly 1,000 feet above surrounding terrain near the Pacific Ocean, likely resulting in ducting interference to LA County's operations, whereas Applicant's proposed location is simply too close to LA County (and too terrain shielded) to do the same.⁸ Whatever interference LA County is experiencing from XHTJB's operations is distinguishable from the Applicant's proposed operations and should have no bearing here.

It should be noted that Applicant's proposed operations on Channel 15 also will not impact LA County's Mt. Disappointment site (the one site modeled in the Pericle Study) for one very particular reason – the Mt. Disappointment site has not been constructed. Although LA County was first granted authority to construct a system on Channel 15 in 2008, much of the system remains unbuilt. On December 31, 2018, LA County filed a request for a further extension of time to complete construction (which is pending as of this writing) of its long-envisioned T-Band system (including the Mt. Disappointment site) until December 31, 2020.⁹ The request notes that as of the end of 2018 – ten years after the County was first granted authority to construct and operate on Channel 15 – LA County had purchased and installed equipment at 14 sites, with plans to install equipment at 11 additional sites by March 2019.¹⁰ In its May 30, 2019 Petition, however, LA County notes that “it is now experiencing interference

⁸ CTI Study at 6-7.

⁹ Annual Report and Request for Extension of Los Angeles County, California, FCC File No. 0006064558 (Dec. 31, 2018). This request, if granted, would allow LA County 12 years to construct its system.

¹⁰ *Id.* at 6. Note that the request states that LA County has 41 Channel 15 sites, yet both the CTI Study and the Pericle Study identify only 28 sites.

[from station XHTJB] so significant at many of its transmitter sites that such sites are unusable on Channel 15 . . .” and that efforts to mitigate have been unsuccessful “if such techniques can even be discovered.”¹¹

When the XHTJB interference issue is coupled with the County’s protracted, incomplete buildout efforts to date, its unlikely that the Mt. Disappointment site – or any of the County’s other unbuilt Channel 15 sites – will be constructed anytime soon. Rather, assuming LA County is correct that it will be unable to mitigate interference from station XHJTB, it is likely that the County will conclude that it would be an inappropriate expenditure of public funds to continue its buildout under these circumstances and will instead seek construction extensions until the XHJTB matter is resolved or until the County is required to vacate the T-Band. In the meantime, Applicant is ready, able and willing to deploy on Channel 15, and to provide service to the public which will not cause harmful interference to LA County’s current operations or its proposed sites.

Finally, the Petition cites Section 73.687(e)(3) for the proposition that television stations are required to protect land mobile stations.¹² Section 73.687(e)(4)(i) provides, however, that “if the land mobile station is not operating when the TV facility commences operations and it does not commence operation within the time period permitted by its authorization in accordance with Part 90 of this Chapter, it will not be protected.”¹³ This rule section stands for the proposition that the Commission intends to balance the needs of land mobile radio licensees and broadcast TV station applicants, and that unconstructed land mobile facilities may not tie up spectrum

¹¹ Petition at 6.

¹² Petition at 4.

¹³ 47 C.F.R. § 73.687(e)(4)(i).

beyond the authorized construction period (which in the case of the licenses subject to the pending extension request expired on December 31, 2018).

Put simply, Applicant should not be held hostage to LA County's indefinite plans to fully deploy on Channel 15, its meritless claims of potential interference, or interference being caused by a third party. While Applicant appreciates the special and unique challenges of public safety licensees, television broadcasters serve the public too, and when they can do so without causing interference to land mobile licensees, as is the case here, they should be allowed to proceed.

IV. APPLICANT HAS NO ALTERNATIVES.

LA County claims that Applicant has not demonstrated that there are no other available channels for its displacement location. This is simply not correct. As indicated in the CTI Study, CTI has performed periodic studies and has not been able to locate a viable, vacant channel.¹⁴

As stated in Applicant's April 4, 2019 amendment, Applicant believes the Application complies with all Commission rules; but if the Commission believes a waiver of a rule is required, Applicant requests such a waiver. Section 1.925(b)(3) of the rules provides that the Commission may waive its rules where an applicant has no reasonable alternative.¹⁵ As indicated above, Applicant's proposal will allow it to resume service that focuses on programming of interest to residents of the Temecula area, including locally-produced news. Moreover, Applicant has no alternative because no other channels are available. Finally, as indicated above, no party will be prejudiced by a grant of the Application. Applicant therefore respectfully submits that grant of the Application would serve the public interest and is therefore warranted.

¹⁴ CTI Study at 7.

¹⁵ 47 C.F.R. § 1.925(b)(3).

V. GRANT OF THE APPLICATION IS IN THE PUBLIC INTEREST.

Applicant provides an important public service by providing free, over-the-air TV to residents of the Temecula area. For 15 years, residents of Temecula have been able to receive over-the-air programming from K12PO. Today K12PO is off-the-air through no fault of Applicant, and every day the station is dark is a day that the residents of Temecula miss out on local news, public affairs programming, and other programming of interest to them. Restoring this programming to the community is in public interest. Moreover, it is contrary to the public interest to deny the Application when, as detailed above, the proposed channel 15 station will not cause interference to LA County and Petitioner has failed to demonstrate that it is likely to do so. In the unlikely event that interference concerns arise, Applicant is more than willing to work with LA County to remedy those concerns, but as the facts exist today, the public interest lies squarely on the side of grant of the Application.

CONCLUSION.

Therefore, for the reasons stated above, the Media Bureau should grant the Application and dismiss or deny LA County's Petition.

Respectfully submitted,

CHANNEL 51 OF SAN DIEGO, INC.

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June 26, 2019

STATEMENT OF MICHAEL D. MCKINNON

I, Michael Dean McKinnon, President of Channel 51 of San Diego, Inc., have reviewed the foregoing "Opposition to Petition to Deny" and hereby certify under penalty of perjury that to the best of my information, knowledge and belief, the information contained therein is accurate and correct.



Michael Dean McKinnon

June 25, 2019

**ENGINEERING STATEMENT IN SUPPORT OF OPPOSITION TO
PETITION TO DENY FILED BY LOS ANGELES COUNTY, CALIFORNIA
IN THE MATTER OF DISPLACEMENT TRANSLATOR APPLICATION
K12PO CH 15 FILE NUMBER 0000052518
TEMECULA, CALIFORNIA**

SUMMARY

This engineering statement has been prepared on behalf of Channel 51 of San Diego, Inc. ("K12PO"), licensee of LPTV station K12PO and applicant for displacement facilities on file with the FCC under File Number 0000052518, as amended on April 14, 2019 to specify a revised directional antenna pattern and maximum ERP of 9 kilowatts. No other changes to the CH 15 displacement application first filed on April 11, 2018 have been made.

The Petition to Deny filed by Los Angeles County, California ("LA County") describes its CH 15 waiver grant based FCC authorization. It then goes on to explain in greater detail that LA-RICS planned development of a "...modern, integrated, wireless voice and data communications system that will support more than 34,000 first responders and local mission-critical personnel...operating in both the 7000 MHz band and the 470 – 512 MHz band...." LA County goes on to explain that "The spectrum at 482 – 488 MHz (TV channel 16) is allocated exclusively for public safety in Los Angeles and provides the core spectrum for the Los Angeles County Sheriff's Department and other agencies' communications systems." Emphasis added.

LA County then states the following:

- II. The K12PO engineering currently on file is fatally flawed and will cause significant interference to LA County's public safety operations. To support its contention the following is submitted:
 - A. A history of analog TV Interference to Land Mobile Operations over the period from 1982 – 1991 is described and relied upon.

- B. A single path profile from the K12PO transmitter site to one LA County CH 15 site called Mt. Disappointment is submitted as the basis for a claim that "...interference is extremely high...the proposed operations will unquestionably cause interference to LA County's Channel 15 operations."
- C. LA County points to interference coming from a new Mexican CH 15 TV facility XHTJB near Tijuana and states that the existence of interference from that station to the LA County CH 15 facilities is "...a reason not to grant the K12PO Waiver Request."

In its conclusion LA County claims that "There is only a bare claim that no other TV channels are available, and therefore there is no determination that there is no reasonable alternative."

K12PO demonstrates herein that each representation made by LA County is lacking in applicability and/or the required accuracy, leaving LA County wholly without basis for its filing.

FCC PROCEDURES FOR DTV PROTECTION OF LAND MOBILE OPERATIONS

Congress set June 12, 2009 as the deadline for full power television stations to stop broadcasting analog signals in a process called the Digital Transition. This action was preceded by Congressional action on 1996 when Congress authorized the distribution of an additional broadcast channel to each licensed full power station allowing simultaneous analog and digital transmission.

LA County in Section A. of its filing provides antiquated and long outdated references for what it calls "...a tortious history of interference from television stations to co-channel and adjacent channel land mobile radio stations." This phraseology sets an unfortunate tone for LA County's entire filing -- hyperbole and exaggeration. These references cover a period from 1984 – 1991 when television operation was analog only and LM mobile radio receivers lacked the selectivity and interference reduction capabilities of today's systems. These references have no technical value as we are dealing with DTV not NTSC analog TV.

Negatives aside, there is a constructive aspect associated with LA County mention of past interference from UHF TV to LM licenses below TV CH 14 and above TV CH 69. Yes, there is a history, but the history tells a story of engineers, and the FCC, working together to understand what causes the interference and how to mitigate the interference.

The matter of DTV Interference to LM facilities was treated in the Sixth Report and Order in the Matter of "Advanced Television Systems and Their Impact upon the Existing Television Broadcast Service," MB Docket No. 87-268, released April 21, 1997. At paragraph 158 the following synopsis is found:

LMCC and Motorola provided suggestions to alleviate interference from DTV to land mobile operations citing the significant tightening of the DTV emission mask. It is noted that existing analog stations have solved interference by reducing power or installed additional filtering.

There is also this quote. "In an appendix to its comments Motorola provides a technical discussion indicating that a minimum of 30 dB additional attenuation in the DTV emission mask is needed to minimize the potential for adjacent channel interference to land mobile services from short-spaced DTV allotments."

At paragraph 164 it is stated that the FCC has addressed DTV licensee interference to land mobile radio in great part but specified this qualification:

"However, if such problems occur, it will be the initial responsibility of the DTV licensee to protect against or eliminate harmful interference to land mobile services that have commenced operations and that are operating in accordance with our rules at the time the DTV licensee goes on the air."

The bottom line here is not that LA County need worry about adjacent channel interference to its existing CH 16 land mobile operation from K12PO but rather that the standards have been in place for well over a decade for this not to happen. K12PO is well aware of the standards and

interference requirements and will employ the appropriate filtering in its transmission system design.

An example of the FCC Process may be seen in Appendix 1 attached which is a construction permit issued to WMEI by the Media Bureau for operation on CH 14 at Mayaguez, Puerto Rico. Condition 3 clearly sets forth the protection criteria to land mobile radio facilities operating in CH 460 - 470 MHz band. Appendix 2 is the affiant's design criteria for this particular facility to meet the criteria of placing the interfering signal in the noise floor for this particular application. This is part of the information sent to the FCC as part of the license filing which was accepted by the FCC, and the station was licensed. Neither the station nor the FCC received one land mobile radio complaint of interference.

To be clear, protection of an adjacent channel land mobile facility by a DTV facility is a standard practice established and regulated by the FCC and interference to the CH 16 LA County land mobile service will not be associated with the operation of K12PO on CH 15.

PROTECTION OF LA COUNTY CH 15 T-BAND FACILITIES

LA County, in Section II. B. of its filing, states that the methodology employed in the pending K12PO application to demonstrate no interference to LA County CH 15 operations is flawed based on a three-page document prepared by Pericle Communications Company. The Pericle document states that the correct methodology for determining harmful interference is to use a point-to point study and they provide an example path from the K12PO transmitter site to one of the 28 T-Band sites, Mt. Disappointment. The Pericle document provides their calculations, sets a noise floor of -100.2 dBm and an interference threshold 6 dB below the thermal noise floor for an interfering signal of -106.2 dBm as the point of de minimis interference.

K12PO has no issue with LA County setting the standard for interference based on the point-to-point method. And we will proceed with our analysis even though this method is not commonly used in FCC filings for VHF and UHF wireless allocations.

The Pericle analysis is disappointingly lacking in accuracy and should be disregarded for several reasons:

1. RadioSoft Comstudy path profile software was utilized to conduct point-to-point path study analysis for all 28 LA County T-Band sites, not just the Mt. Disappointment site, which was evidently chosen because it has the least terrain blockage and the potential to create the strongest signal. The RadioSoft software was chosen as it has been widely used throughout the wireless community for decades. Pericle does not identify its software tool nor does it identify the terrain sample interval used.

The RadioSoft terrain profiles, with signal level analysis, are attached as Figure 1. The profiles are in order by FCC call sign so for example, Page 1 is call sign WQJX500 and page 2 WQJX501. All sites are associated with at least two call signs and in this case the WQJX500 site is also the WQJX513 and WQJX541 site.

2. The Mt. Disappointment site is Page 13, call signs WQJX512 and WQJX540. A comparison of our calculations and Pericle's is that our path loss is 156.8 dB and the Pericle loss is 153.7 dB. This is agreement within 2% which is acceptable. What is not acceptable is that Pericle shows obstructed Fresnel zones but includes no Fresnel zone loss. We find 10 dB of Fresnel zone loss which materially changes the resulting signal level. The second, and more significant error is that Pericle is using the full K12PO ERP instead of adjusting the ERP for the 25 kHz land mobile bandwidth.
3. For the WQJX512 and WQJX540 path from K12PO to Mt. Disappointment our calculated signal level is -130.4 dBm compared to -89.3 dBm computed by Pericle. That puts the K12PO signal 30.2 dB under the noise floor and 24.2 dB under the -106.2 dBm level set by Pericle as de minimis interference.

4. Listed on Figure 2 are the path profile results by decreasing signal level computed at the LA County T-Band license site locations.

XHTJB CH 15 INTERFERENCE TO LA COUNTY CH 15 T-BAND FACILITIES

It is difficult to parse what exactly LA County is saying in Section II. C. regarding the XHTJB CH 15 licensed facility in Tijuana. The first sentence almost reads as though LA County was aware of the CH 15 allotment and made a proposal to the Commission that was not acted on favorably. No matter the background, LA County claims to be experiencing significant interference from the XHTJB facility despite a significant null to the north to protect LA County. One obvious step would be to ask the XHTJB licensee for a copy of the manufacturer test range pattern measurements and to arrange a visit to the site to confirm that the installation matches the test range data. That should not be an expensive undertaking but could yield substantial relief.

More importantly is the suggestion that because XHTJB is causing interference to LA County facilities that K12PO will do the same. We have proven herein that there is absolutely no direct interference from K12PO to any of the 28 T-Band sites. However, there are important reasons why the K12PO facility will not interfere as the XHTJB facility evidently does:

1. The K12PO antenna pattern was modified in the April Amendment to reduce power to less than 10% of the XHTJB ERP toward LA County CH 15 sites.
2. The K12PO site is in a valley with significant terrain obstructions north toward LA County which greatly attenuate the signal while the XHTJB sits on a 300 meter, almost a thousand-foot-high, elevation above the surrounding terrain.
3. The XHTJB site is a little over 145 kilometers south of the K12PO site and 215 kilometers from the LA reference coordinates. As an engineering firm working with clients in LA and San Diego for decades, we know that the San Diego to LA path is plagued by ducting much of the time which is most likely the prime propagation path into LA County when interference occurs. The XHTJB path goes over the Pacific Ocean from La Jolla to Laguna Beach. To conclude, K12PO is too close to LA

County sites to be involved in ducting interference while the XHTJB site is right where ducting in LA is expected.

4. Figure 3 is a path profile from XHTJB to Mt. Disappointment, WQJX512 and WQJX540 licenses. Examination of this path shows one minimal obstruction at mid path and a signal level 3.6 dB above the noise floor and 24.7 dB greater than the proposed K12PO signal level. This is just another demonstration for why stating that CH 15 interference from XHTJB is an indication that there will be interference from K12PO is a false argument.

Based on the above points it is believed clear that there is no relationship between XHTJB CH 15 interference and K12PO.

LA COUNTY CONCLUSION

The La County conclusion states that it is clear that interference will be caused from K12PO to LA County. It has been demonstrated that the work done by Pericle on which LA County bases that conclusion was incomplete and also not a thorough analysis of all 28 sites.

LA County claims that K12PO has not demonstrated that there is no reasonable alternative to its proposed CH 15 application. That is not correct, but we are stating again here, for the record, that affiant has conducted periodic allocation studies in the extremely packed TV spectrum and has not been able to locate a viable channel. The periodic studies have been a requirement as the FCC has opened and closed filing opportunities for LPTV stations that can sometimes change the results, but no such opportunity has been found.

CONCLUSION

The work submitted herein is believed to demonstrate, using the methodology specified by LA County, that there is no K12PO interference to any of the 28 licensed CH 15 LA County sites. It has also been demonstrated that the claims of existing TV CH 15 interference from XHTJB have no relationship to any interference from K12PO. This is particularly true because K12PO has no ducting potential into LA County CH 15 facilities where XHTJB is clearly located in a location where ducting into LA County is expected. As a good neighbor K12PO notes that LA County

has not demonstrated that it has undertaken common sense engineering solutions to resolve interference believed coming from XHTJB.

The foregoing was prepared on behalf of **Channel 51 of San Diego, Inc.** by Clarence M. Beverage of *Communications Technologies, Inc.*, Marlton, New Jersey, whose qualifications are a matter of record with the Federal Communications Commission. The statements herein are true and correct of his own knowledge, except such statements made on information and belief, and as to these statements he believes them to be true and correct.



Clarence M. Beverage
for Communications Technologies, Inc.
Marlton, New Jersey

June 10, 2019



United States of America
FEDERAL COMMUNICATIONS COMMISSION
TELEVISION BROADCAST STATION
CONSTRUCTION PERMIT

Authorizing Official:

Official Mailing Address:

CMCG PUERTO RICO LLC
900 LASKIN ROAD
VIRGINIA BEACH VA 23451

Clay C. Pendarvis
Associate Chief
Video Division
Media Bureau

Facility Id: 26676
Analog TSID: 3332
Digital TSID: 3333
Call Sign: DWMEI
Permit File Number: BMPCDT-20080620ACV
This permit modifies permit no.: BPCDT-20060828ABI

Grant Date: September 19, 2008

This permit expires 3:00 a.m.
local time, August 18, 2009.

Subject to the provisions of the Communications Act of 1934, as amended, subsequent acts and treaties, and all regulations heretofore or hereafter made by this Commission, and further subject to the conditions set forth in this permit, the permittee is hereby authorized to construct the radio transmitting apparatus herein described. Installation and adjustment of equipment not specifically set forth herein shall be in accordance with representations contained in the permittee's application for construction permit except for such modifications as are presently permitted, without application, by the Commission's Rules.

Equipment and program tests shall be conducted only pursuant to Sections 73.1610 and 73.1620 of the Commission's Rules.

Name of Permittee: CMCG PUERTO RICO LLC

Station Location: PR-ARECIBO

Frequency (MHz): 470 - 476

Channel: 14

Hours of Operation: Unlimited

APPENDIX 1

Transmitter: Type Accepted. See Sections 73.1660, 73.1665 and 73.1670 of the Commission's Rules.

Antenna type: (directional or non-directional): Directional

Description: SWR, SWDDP 8-6-2-8

Beam Tilt: 1.5 Degrees Electrical

Major lobe directions 295
(degrees true):

Antenna Coordinates: North Latitude: 18 deg 09 min 17 sec

West Longitude: 66 deg 33 min 16 sec

Transmitter output power: As required to achieve authorized ERP.

Maximum effective radiated power (Average): 315 kW
25 DBK

Height of radiation center above ground: 128.3 Meters

Height of radiation center above mean sea level: 1328.3 Meters

Height of radiation center above average terrain: 833 Meters

Antenna structure registration number: 1011019

Overall height of antenna structure above ground (including obstruction lighting if any) see the registration for this antenna structure.

Special operating conditions or restrictions:

- 1 The grant of this construction permit is subject to the condition that, with ample time before commencing operation, you make a good faith effort to identify and notify health care facilities (e.g., hospitals, nursing homes, see 47 CFR 15.242(a)(1)) within your service area potentially affected by your DTV operations. Contact with state and/or local hospital associations and local governmental health care licensing authorities may prove helpful in this process. During this pre-broadcast period, you must provide all notified entities with relevant technical details of your operation, such as DTV channel, targeted on-air date, effective radiated power, antenna location, and antenna height. You are required to place in the station's public inspection file documentation of the notifications and contacts made and you may not commence operations until good faith efforts have been made to notify affected health care facilities. During this pre-broadcast period and for up to twenty (20) days after commencing operations, should you become aware of any instances of medical devices malfunctioning or that such devices are likely to malfunction due to your DTV operations, you must cooperate with the health care facility so that it is afforded a reasonable opportunity to resolve the interference problem. At such time as all provisions of this condition have been fulfilled, and either upon the expiration of twenty (20) days following commencement of operations or when all known interference problems have been resolved, whichever is later, this condition lapses.

Special operating conditions or restrictions:

- 2 This is to notify you that the grant of this construction permit is subject to the condition that this facility can not commence operation prior to midnight of February 17, 2009, or by such other date as the Commission may establish in the future, without prior approval from the Commission.

- 3 During equipment tests, authorized by Section 73.1610 of the Commission's Rules, the permittee shall take adequate measures to identify and substantially eliminate objectionable interference which may be caused to existing land mobile radio facilities in the 460 to 470 MHz band. Documentation that objectionable interference will not be caused to existing land mobile radio facilities shall be submitted along with the request for Program Test Authority. Program tests shall not be commenced under Section 73.1620(a) of the Commission's Rules and may only be started after specific authority is granted by the Commission. An application for a license must be filed within 10 days after the start of program tests.

- 4 The authority granted herein is subject to the condition that the field strength produced by the permitted/licensed facility shall not exceed 72 mV/m as measured at the Federal Communications Commission's Santa Isabel, Puerto Rico monitoring station. In the event that this limitation is exceeded or if interference occurs to the monitoring, direction finding, or related operations of the Federal Communications Commission's Santa Isabel, Puerto Rico monitoring station, the permittee/licensee shall take such immediate corrective action as is necessary to eliminate the interference. This shall include responsibility for furnishing, installing and adjusting transmitter filter circuits, shielding, or other corrective devices. If these measures fail to eliminate interference to FCC operations caused by the presence of the permittee/licensee's signal, or if the field intensity exceeds 72 mV/m, the permittee/licensee shall immediately reduce power to the extent necessary to eliminate the interference and/or comply with field strength limit. After determining this lower power level, the permittee/licensee shall immediately apply for a Special Temporary Authority (STA) and shall file an application to the Commission for the altered parameters.

*** END OF AUTHORIZATION ***

WMEI LAND MOBILE PROTECTION ANALYSIS

OCTOBER 27, 2008

ERP MAX in 25 kHz Channel in band = 1,314 watts = 61.186 dBm

8 VSB out of Band emission = -33 dB

Free space loss at 1 mile = -90 dB

Polarization loss = -10 dB

Signal level before filter loss = -71.8 dBm

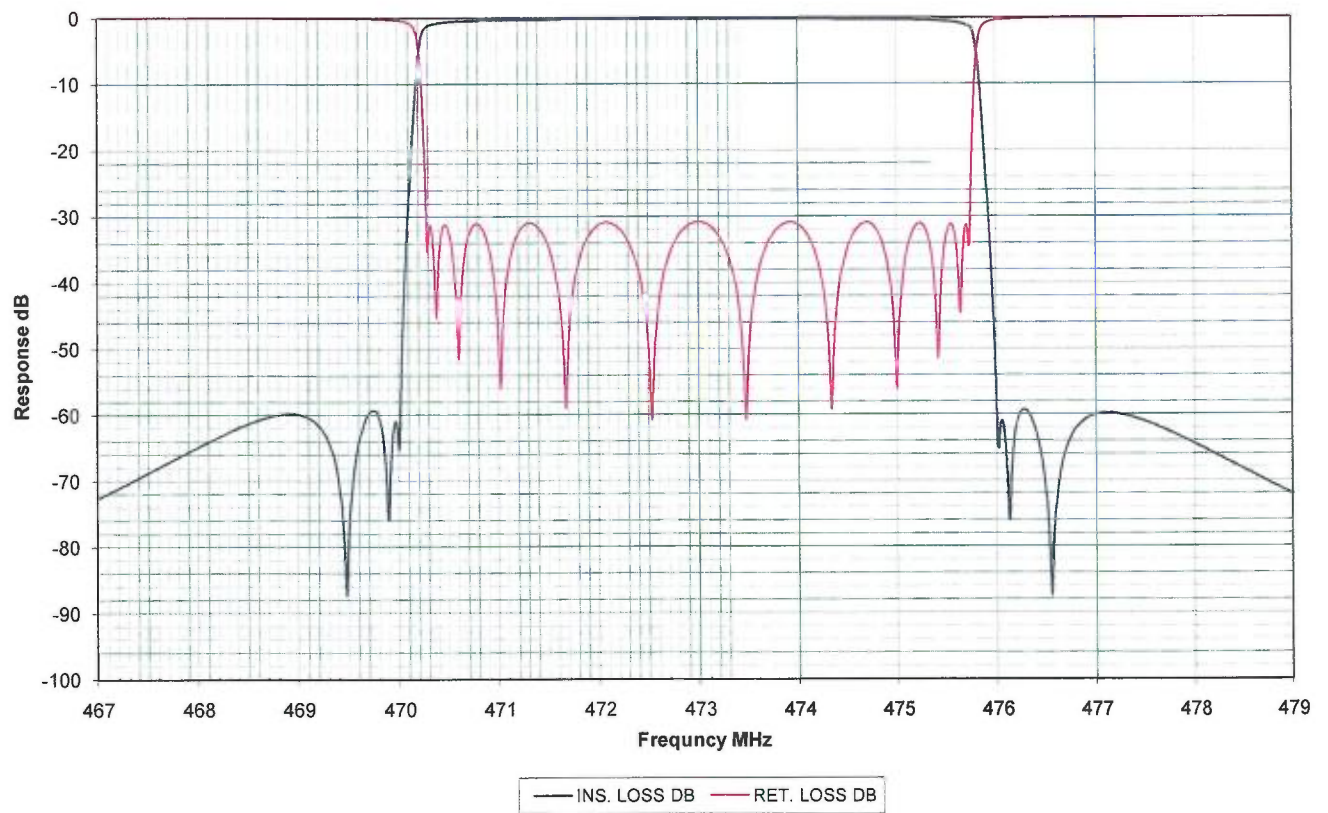
<u>Filter Attenuation dB</u>	<u>Signal @ Receiver dBm</u>
470.00 MHz = -48.25	-120.05
469.985 MHz = -53.57	-125.37
469.975 MHz = -57.85	-129.65
469.90 MHz = -61.74	-133.54
469.785 MHz = -80.37	-152.17
469.61 MHz = -66.24	-138.04
468.86 MHz = -66.4	-138.20
468.00 MHz = -68.83	-140.63
460 - 467.985 MHz = > -65.00	-136.8

Receiver noise floor = -115 dBm 0.4(uv)

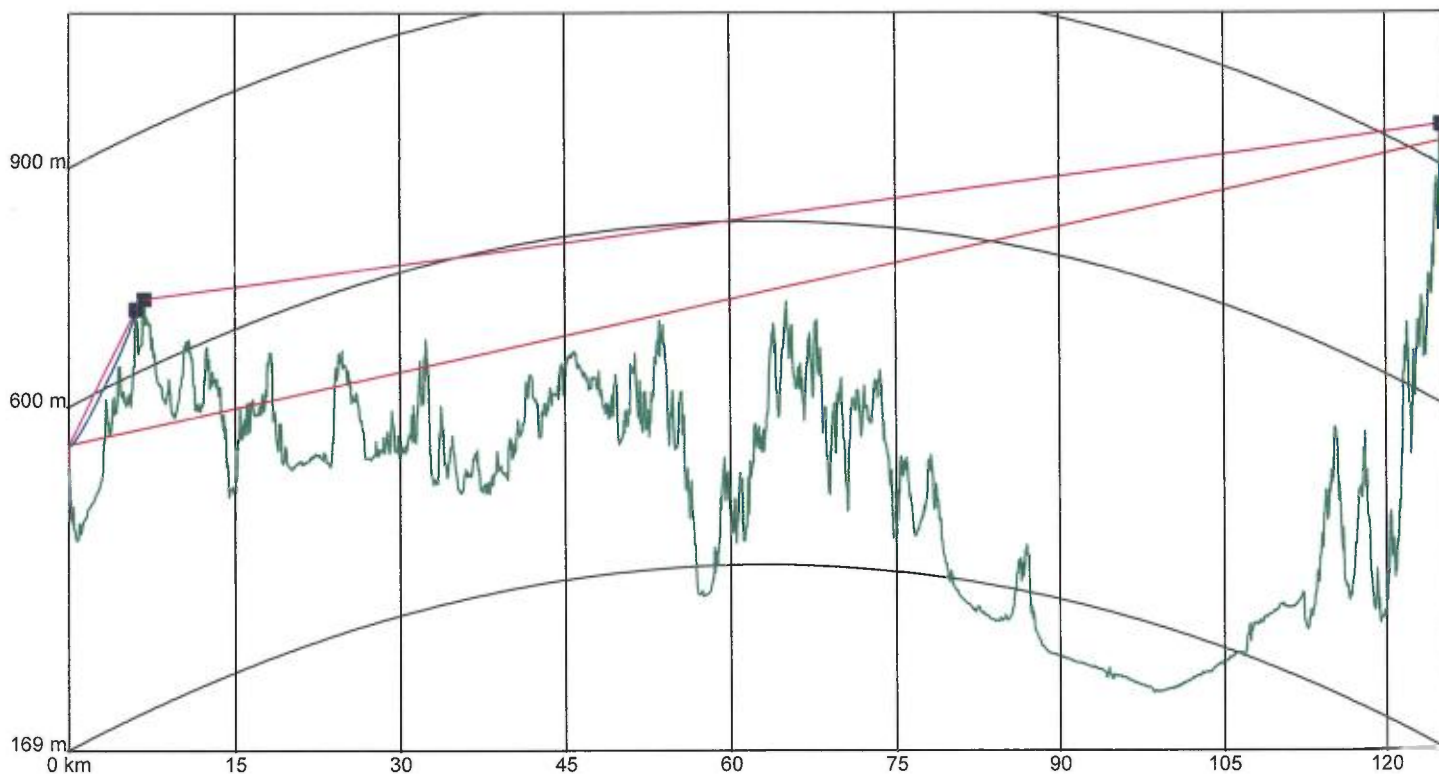
Item	QTY	Spec.	Description	Total
			<p><u>12 Stage Land Mobile Filter Specification</u></p> <p>CONSTANT IMPEDANCE WAVEGUIDE DTV MASK FILTER WITH 12 SECTION ELLIPTIC RESPONSE CIRCULAR CAVITY FILTERS MADE OF SILVER PLATED INVAR TO ENSURE LOW LOSS AND THERMAL STABILITY.</p> <p>Consists of:</p> <ul style="list-style-type: none"> (2) Waveguide Short Slot Hybrid Couplers (2) Circular Iris Coupled Waveguide Bandpass Filters (2) 1000 W Oil Filled Reject Loads w/ voltage probes (2) Blowers and shrouds (1) Factory Assembly and Test <p><u>SPECIFICATIONS</u></p> <p>Insertion Loss: < 0.4 dB @ Fcenter < 1.8 dB @ Fcenter +/- 2.69 MHz</p> <p>Group Delay: 0 nS Reference @ Fcenter < 2300 nS @ Fcenter +/- 2.69 MHz</p> <p>VSWR: <1.10 : 1 +/-2.69 Mhz</p> <p>POWER: 30 kW Average Max.</p> <p>RESPONSE: >50 dB @ 469.985 MHz >58 dB @ 469.785 and below >60 dB @ 477 to 482 MHz</p> <p>HARMONIC REJECTION: >60 dB @ 2ND AND 3RD HARMONICS</p> <p>TEMPERATURE: 60 to 80 deg. F. operating</p>	

DIELECTRIC WMEI CALCULATED FILTER RESPONSE

Channel 14 12 Pole Elliptic Response



ComStudy 2 Path Profile



K12PO

Lat: 33-35-34.4 N
 Lon: 117-08-53.9 W
 AMSL: 524 m
 Tower AGL: 28 m

Profile Info

Distance: 125.65 Km
 Bearing: 303.87 deg
 # of points: 2000
 K value: 1.333
 Frequency: 479.0000
 Clearance: 0.6

WQJX500

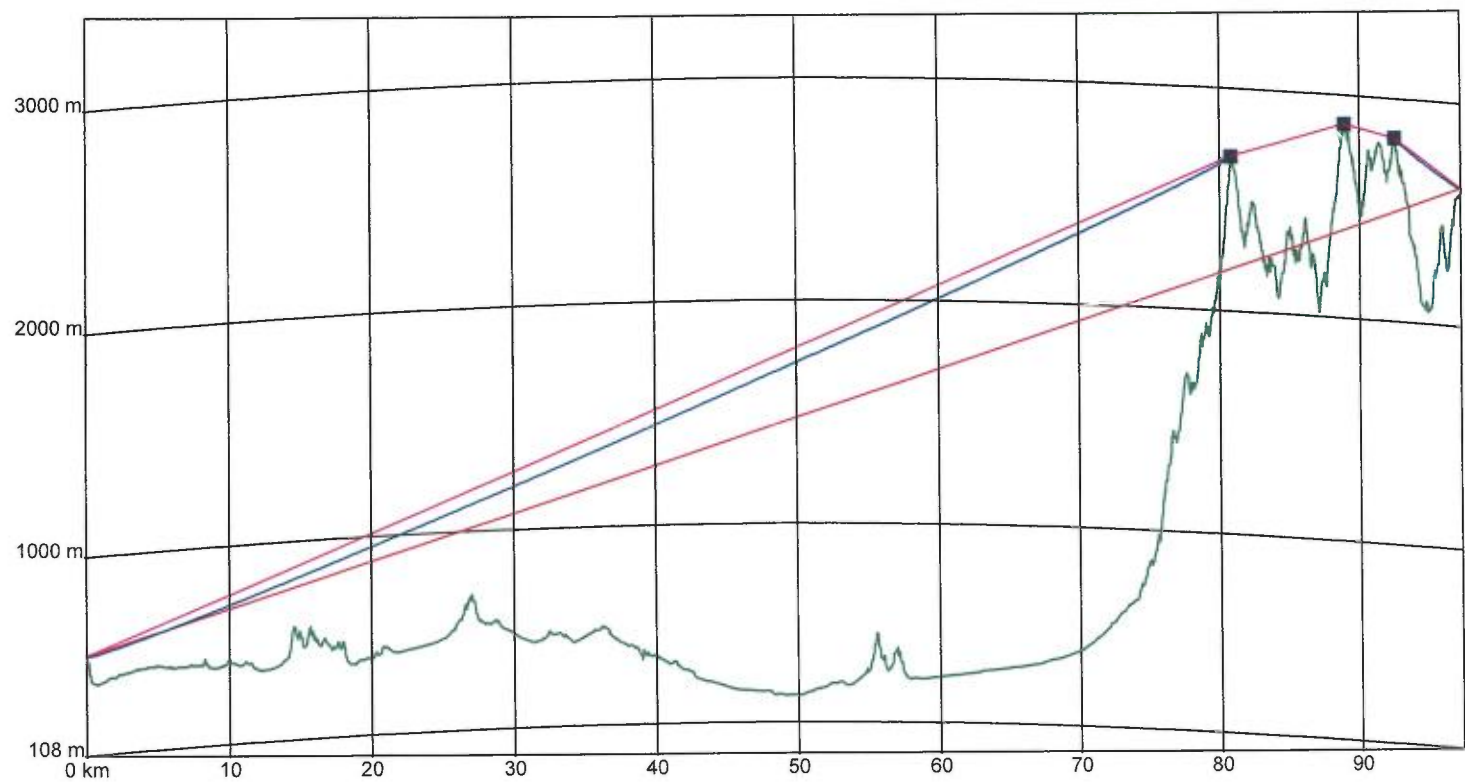
Lat: 34-13-03.0 N
 Lon: 118-16-59.3 W
 AMSL: 904 m
 Tower AGL: 30 m

Losses

Base Loss: 144.2 dB
 Fade Margin: N/A
 Diffraction: 38.4 dB
 Fresnel: 5.0 dB

K12PO CH 15 Path to	WQJX500
AZIMUTH BEARING TO RECEIVER	303
RELATIVE ERP TO 9 KW AT BEARING	0.127
ERP AT THAT BEARING kW	0.145161
ERP ADJUSTED FOR BANDWIDTH	0.000674
ERP dBm	28.3
PATH LOSS, dB	144.2
DIFFRACTION LOSS, dB	38.4
FRESNEL LOSS, dB	5
CALCULATED SIGNAL AT ANTENNA, dBm	-159.3
SIGNAL PLUS 8 dB ANTENNA GAIN	-151.3
dB ABOVE -100.2 dBm NOISE FLOOR	-51.1

ComStudy 2 Path Profile



K12PO

WQJX501 & WQJX 529

Lat: 33-35-34.4 N
Lon: 117-08-53.9 W
AMSL: 524 m
Tower AGL: 28 m

Lat: 34-21-06.0 N
Lon: 117-40-30.2 W
AMSL: 2586 m
Tower AGL: 30 m

Profile Info

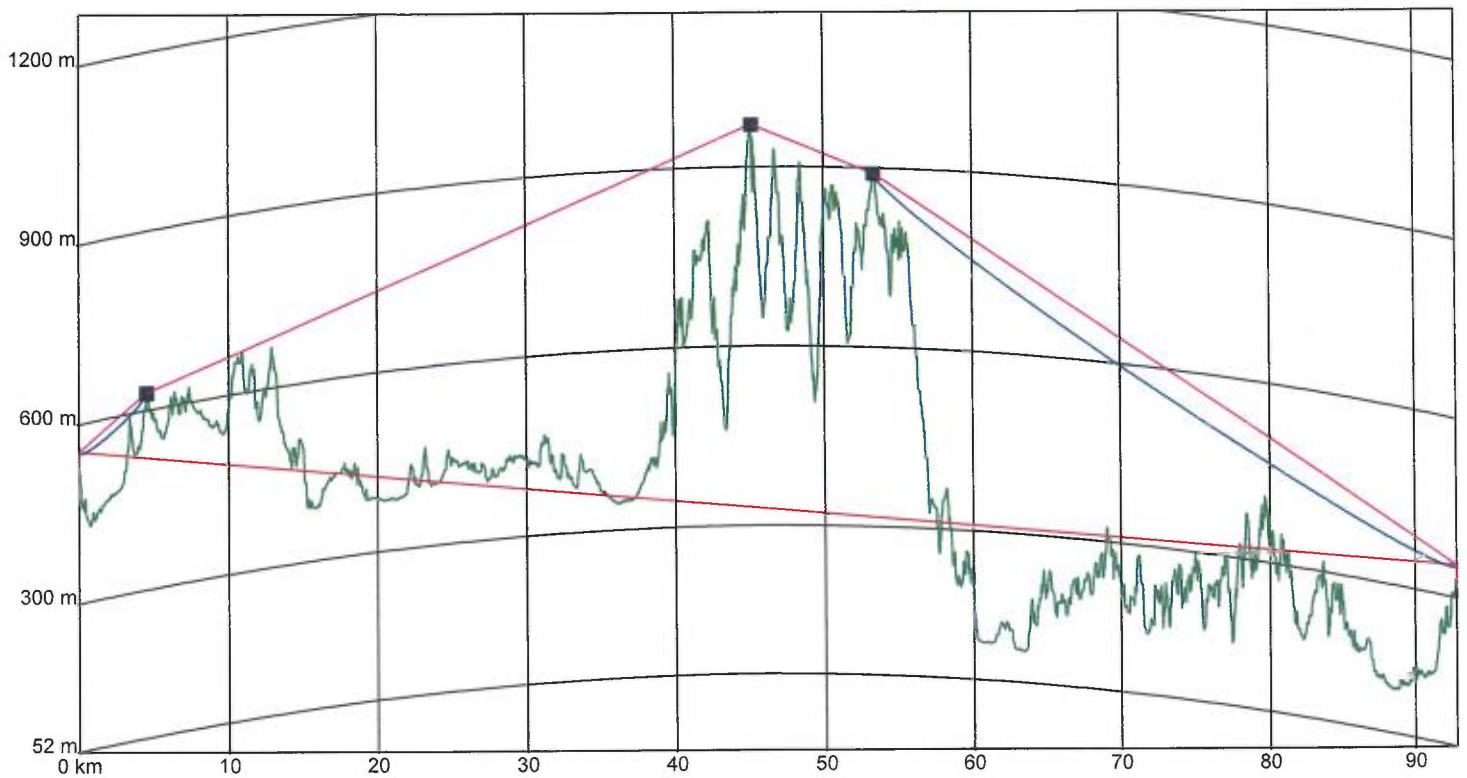
Distance: 97.34 Km
Bearing: 330.22 deg
of points 2000
K value: 1.333
Frequency: 479.0000
Clearance: 0.6

Losses

Base Loss: 139.7 dB
Fade Margin: N/A
Diffraction: 21.3 dB
Fresnel: 3.4 dB

K12PO CH 15 Path to	WQJX501
AZIMUTH BEARING TO RECEIVER	330
RELATIVE ERP TO 9 KW AT BEARING	0.182
ERP AT THAT BEARING kW	0.298116
ERP ADJUSTED FOR BANDWIDTH	0.001385
ERP dBm	31.4
PATH LOSS, dB	139.7
DIFFRACTION LOSS, dB	21.3
FRESNEL LOSS, dB	3.4
CALCULATED SIGNAL AT ANTENNA, dBm	-133.0
SIGNAL PLUS 8 dB ANTENNA GAIN	-125.0
dB ABOVE -100.2 dBm NOISE FLOOR	-24.8

ComStudy 2 Path Profile



K12PO

Lat: 33-35-34.4 N
 Lon: 117-08-53.9 W
 AMSL: 524 m
 Tower AGL: 28 m

WQJX502 & WQJX 530

Lat: 34-01-05.0 N
 Lon: 118-00-49.0 W
 AMSL: 321 m
 Tower AGL: 33 m

Profile Info

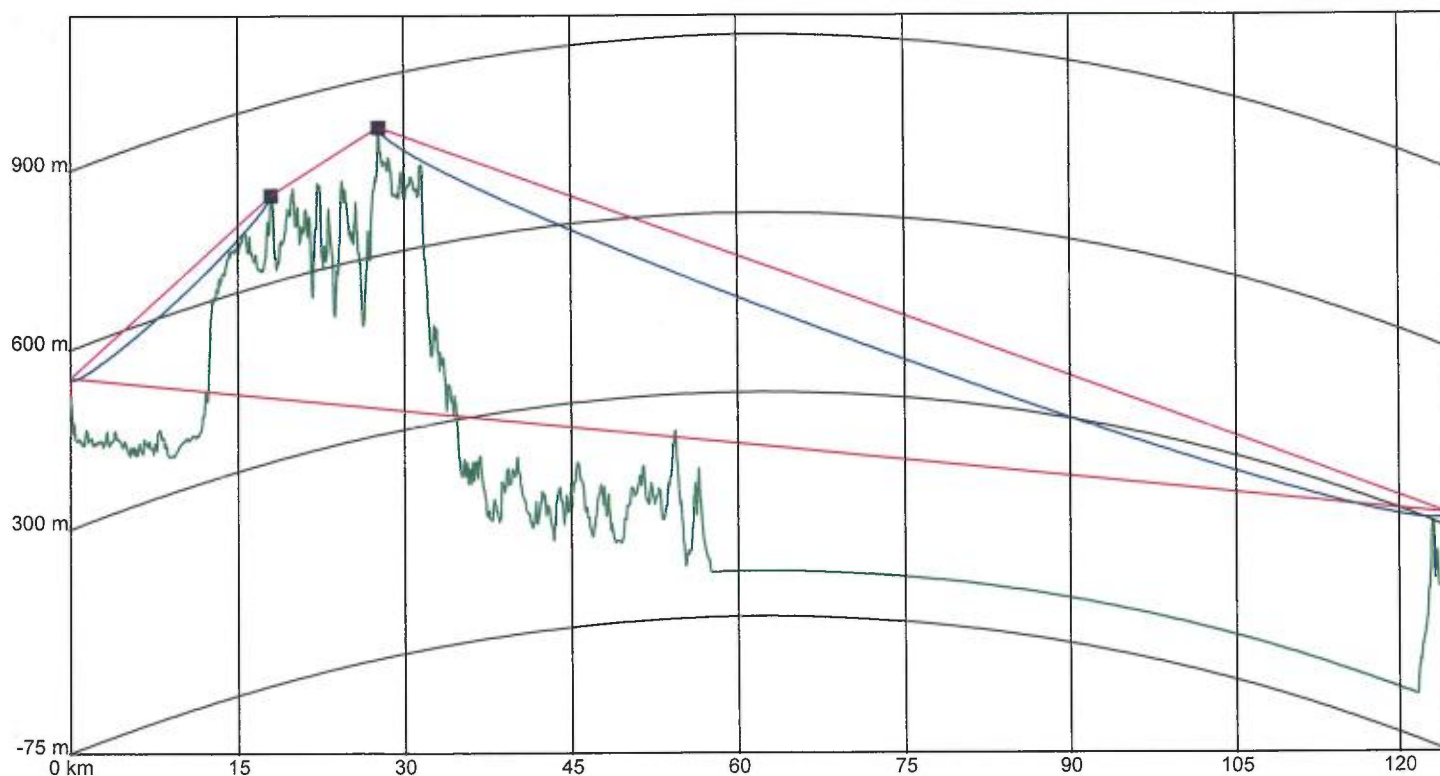
Distance: 92.87 Km
 Bearing: 300.84 deg
 # of points: 2000
 K value: 1.333
 Frequency: 479.0000
 Clearance: 0.6

Losses

Base Loss: 138.1 dB
 Fade Margin: N/A
 Diffraction: 32.9 dB
 Fresnel: 7.0 dB

K12PO CH 15 Path to	WQJX502
AZIMUTH BEARING TO RECEIVER	300
RELATIVE ERP TO 9 KW AT BEARING	0.129
ERP AT THAT BEARING kW	0.149769
ERP ADJUSTED FOR BANDWIDTH	0.000696
ERP dBm	28.4
PATH LOSS, dB	138.1
DIFFRACTION LOSS, dB	32.9
FRESNEL LOSS, dB	7
CALCULATED SIGNAL AT ANTENNA, dBm	-149.6
SIGNAL PLUS 8 dB ANTENNA GAIN	-141.6
dB ABOVE -100.2 dBm NOISE FLOOR	-41.4

ComStudy 2 Path Profile



K12PO

Lat: 33-35-34.4 N
 Lon: 117-08-53.9 W
 AMSL: 524 m
 Tower AGL: 28 m

WQJX503 & WQJX 531

Lat: 33-25-33.1 N
 Lon: 118-28-34.3 W
 AMSL: 287 m
 Tower AGL: 36 m

Profile Info

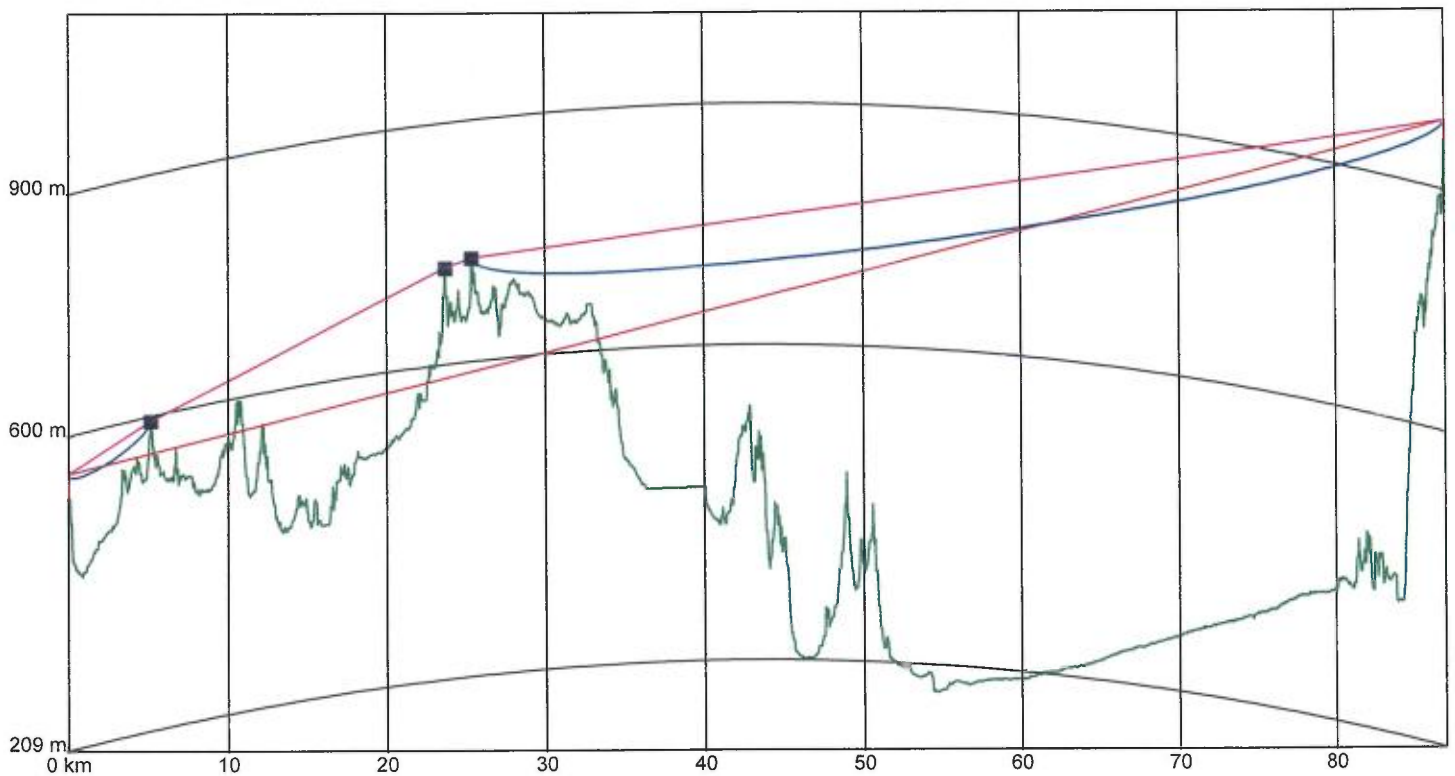
Distance: 124.49 Km
 Bearing: 261.79 deg
 # of points: 2000
 K value: 1.333
 Frequency: 479.0000
 Clearance: 0.6

Losses

Base Loss: 142.4 dB
 Fade Margin: N/A
 Diffraction: 19.9 dB
 Fresnel: 3.9 dB

K12PO CH 15 Path to	WQJX503
AZIMUTH BEARING TO RECEIVER	261
RELATIVE ERP TO 9 KW AT BEARING	0.248
ERP AT THAT BEARING kW	0.553536
ERP ADJUSTED FOR BANDWIDTH	0.002572
ERP dBm	34.1
PATH LOSS, dB	142.4
DIFFRACTION LOSS, dB	19.9
FRESNEL LOSS, dB	3.9
CALCULATED SIGNAL AT ANTENNA, dBm	-132.1
SIGNAL PLUS 8 dB ANTENNA GAIN	-124.1
dB ABOVE -100.2 dBm NOISE FLOOR	-23.9

ComStudy 2 Path Profile



K12PO

Lat: 33-35-34.4 N
 Lon: 117-08-53.9 W
 AMSL: 524 m
 Tower AGL: 28 m

WQJX504 & WQJX 532

Lat: 34-09-37.0 N
 Lon: 117-47-56.0 W
 AMSL: 961 m
 Tower AGL: 25 m

Profile Info

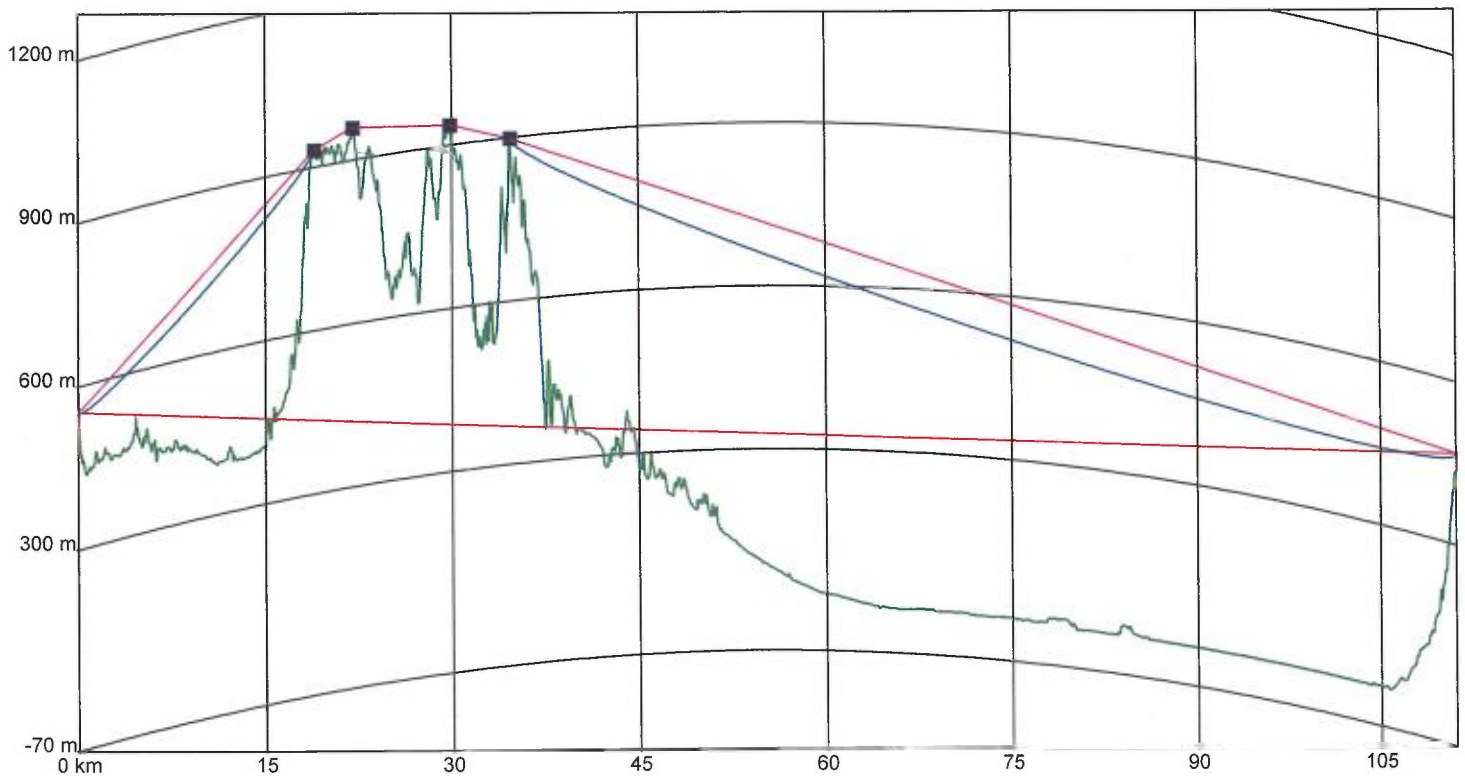
Distance: 87.10 Km
 Bearing: 316.59 deg
 # of points: 2000
 K value: 1.333
 Frequency: 479.0000
 Clearance: 0.6

Losses

Base Loss: 139.4 dB
 Fade Margin: N/A
 Diffraction: 22.3 dB
 Fresnel: 8.4 dB

K12PO CH 15 Path to	WQJX504
AZIMUTH BEARING TO RECEIVER	316
RELATIVE ERP TO 9 KW AT BEARING	0.141
ERP AT THAT BEARING kW	0.178929
ERP ADJUSTED FOR BANDWIDTH	0.000831
ERP dBm	29.2
PATH LOSS, dB	139.4
DIFFRACTION LOSS, dB	22.3
FRESNEL LOSS, dB	8.4
CALCULATED SIGNAL AT ANTENNA, dBm	-140.9
SIGNAL PLUS 8 dB ANTENNA GAIN	-132.9
dB ABOVE -100.2 dBm NOISE FLOOR	-32.7

ComStudy 2 Path Profile



K12PO

Lat: 33-35-34.4 N
 Lon: 117-08-53.9 W
 AMSL: 524 m
 Tower AGL: 28 m

WQJX505 & WQJX 533

Lat: 33-44-50.0 N
 Lon: 118-20-10.0 W
 AMSL: 435 m
 Tower AGL: 32 m

Profile Info

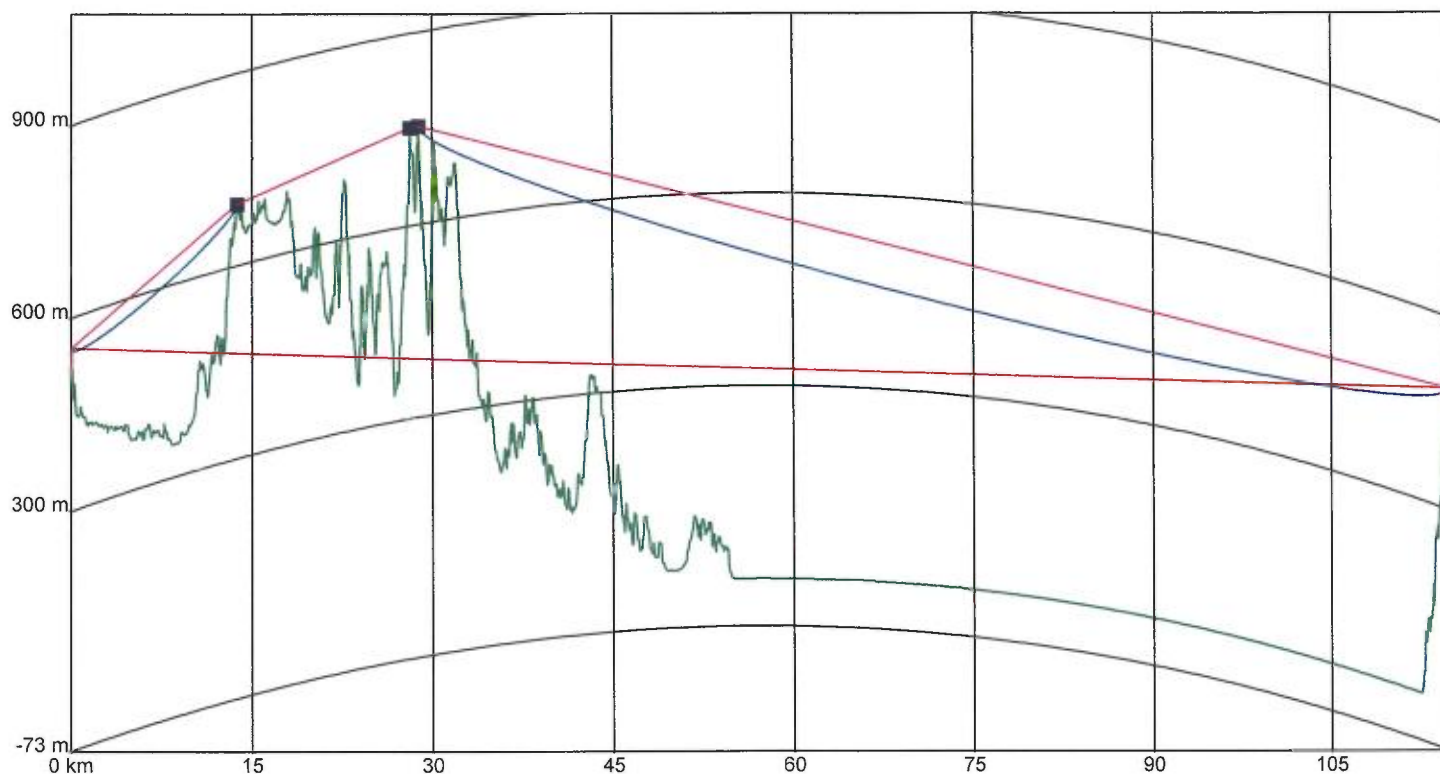
Distance: 111.24 Km
 Bearing: 279.20 deg
 # of points: 2000
 K value: 1.333
 Frequency: 479.0000
 Clearance: 0.6

Losses

Base Loss: 141.5 dB
 Fade Margin: N/A
 Diffraction: 75.6 dB
 Fresnel: 5.4 dB

K12PO CH 15 Path to	WQJX505
AZIMUTH BEARING TO RECEIVER	279
RELATIVE ERP TO 9 KW AT BEARING	0.181
ERP AT THAT BEARING kW	0.294849
ERP ADJUSTED FOR BANDWIDTH	0.00137
ERP dBm	31.4
PATH LOSS, dB	141.5
DIFFRACTION LOSS, dB	75.6
FRESNEL LOSS, dB	5.4
CALCULATED SIGNAL AT ANTENNA, dBm	-191.1
SIGNAL PLUS 8 dB ANTENNA GAIN	-183.1
dB ABOVE -100.2 dBm NOISE FLOOR	-82.9

ComStudy 2 Path Profile



K12PO

Lat: 33-35-34.4 N
 Lon: 117-08-53.9 W
 AMSL: 524 m
 Tower AGL: 28 m

WQJX506 & WQJX 534

Lat: 33-20-59.8 N
 Lon: 118-21-09.2 W
 AMSL: 458 m
 Tower AGL: 30 m

Profile Info

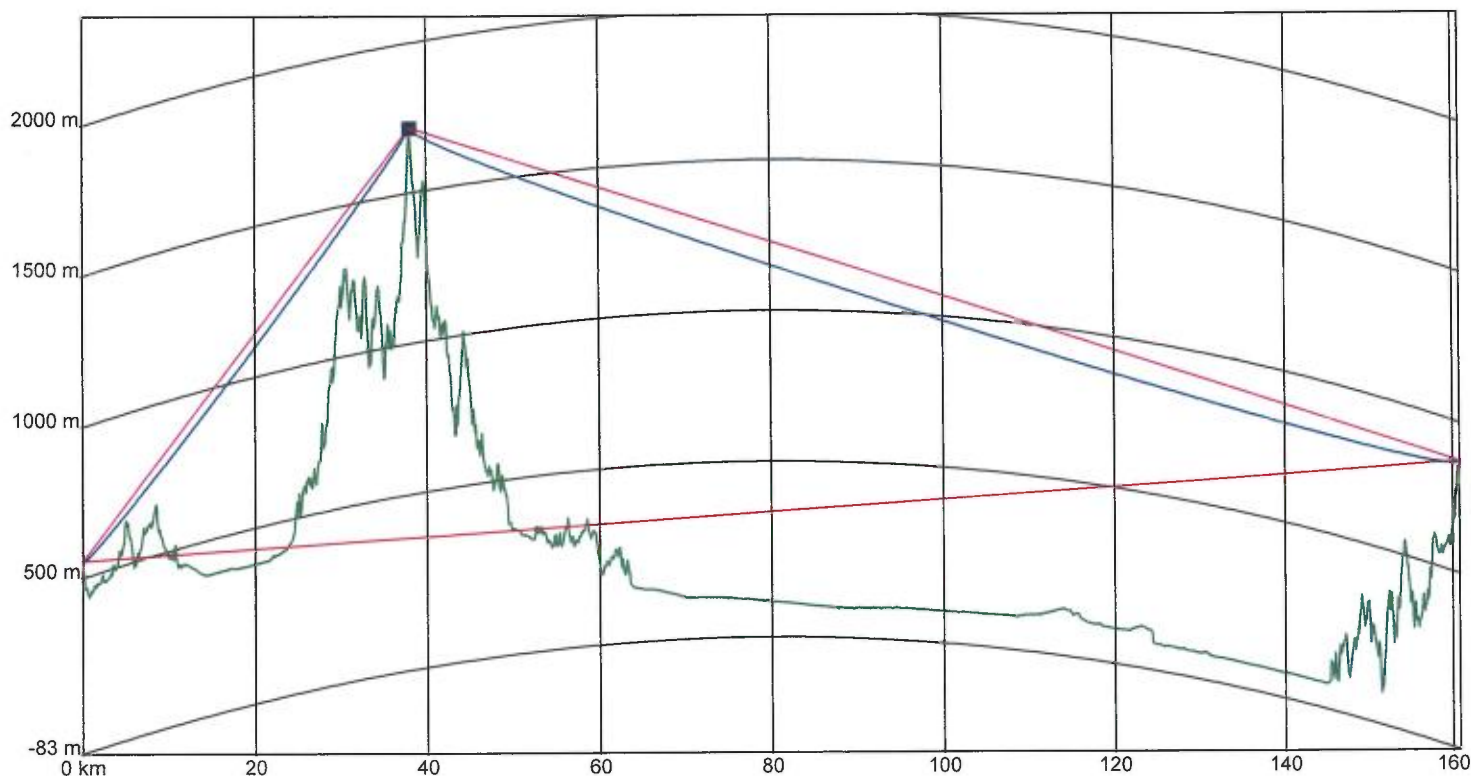
Distance: 114.90 Km
 Bearing: 256.74 deg
 # of points: 2000
 K value: 1.333
 Frequency: 479.0000
 Clearance: 0.6

Losses

Base Loss: 142.6 dB
 Fade Margin: N/A
 Diffraction: 21.7 dB
 Fresnel: 8.7 dB

K12PO CH 15 Path to	WQJX506
AZIMUTH BEARING TO RECEIVER	256
RELATIVE ERP TO 9 KW AT BEARING	0.272
ERP AT THAT BEARING kW	0.665856
ERP ADJUSTED FOR BANDWIDTH	0.003094
ERP dBm	34.9
PATH LOSS, dB	142.6
DIFFRACTION LOSS, dB	21.7
FRESNEL LOSS, dB	8.7
CALCULATED SIGNAL AT ANTENNA, dBm	-138.1
SIGNAL PLUS 8 dB ANTENNA GAIN	-130.1
dB ABOVE -100.2 dBm NOISE FLOOR	-29.9

ComStudy 2 Path Profile



K12PO

Lat: 33-35-34.4 N
 Lon: 117-08-53.9 W
 AMSL: 524 m
 Tower AGL: 28 m

WQJX507 & WQJX 535

Lat: 34-05-09.0 N
 Lon: 118-47-09.0 W
 AMSL: 840 m
 Tower AGL: 30 m

Profile Info

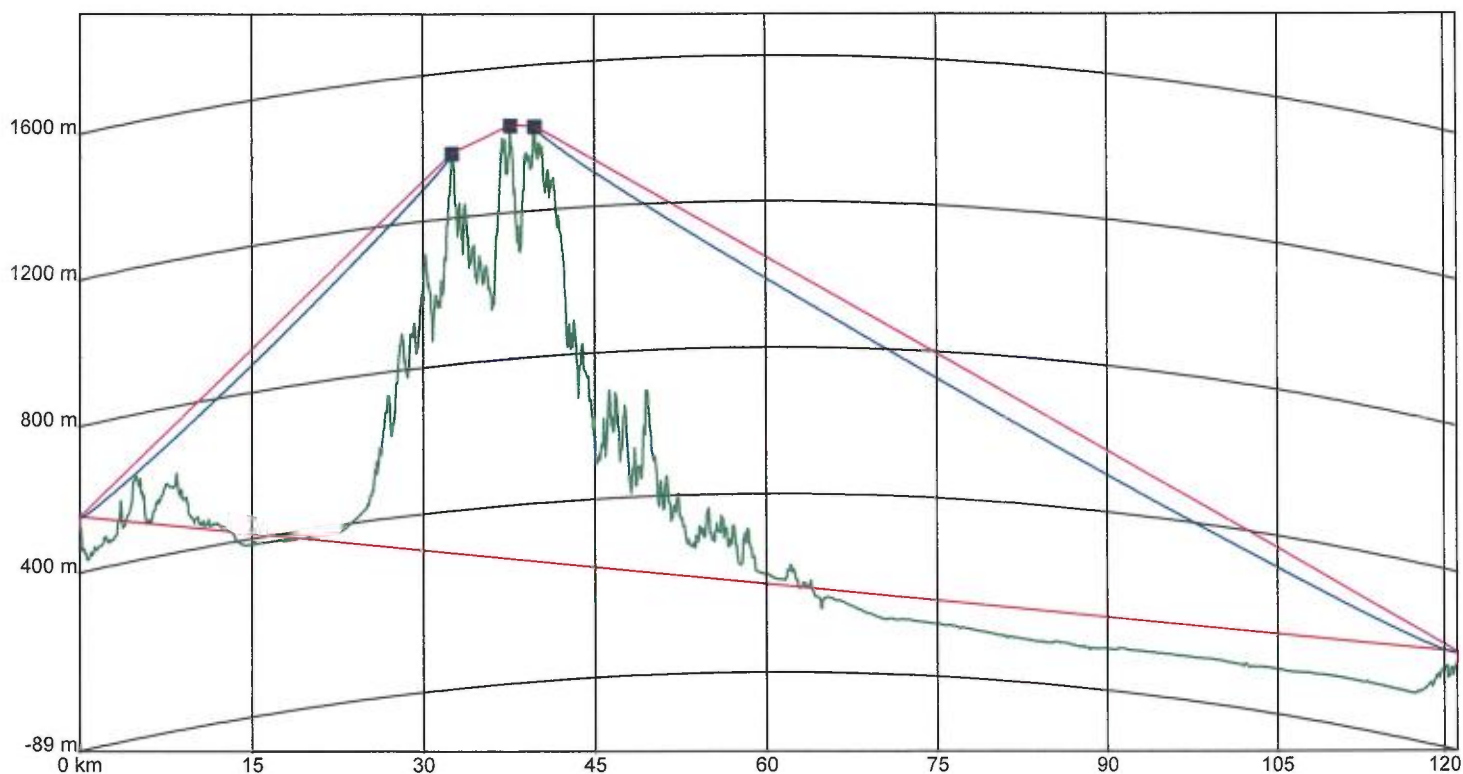
Distance: 160.84 Km
 Bearing: 290.38 deg
 # of points: 2000
 K value: 1.333
 Frequency: 479.0000
 Clearance: 0.6

Losses

Base Loss: 148.5 dB
 Fade Margin: N/A
 Diffraction: 31.7 dB
 Fresnel: 9.4 dB

K12PO CH 15 Path to	WQJX507
AZIMUTH BEARING TO RECEIVER	290
RELATIVE ERP TO 9 KW AT BEARING	0.369
ERP AT THAT BEARING kW	1.225449
ERP ADJUSTED FOR BANDWIDTH	0.005693
ERP dBm	37.6
PATH LOSS, dB	148.5
DIFFRACTION LOSS, dB	31.7
FRESNEL LOSS, dB	9.4
CALCULATED SIGNAL AT ANTENNA, dBm	-152.0
SIGNAL PLUS 8 dB ANTENNA GAIN	-144.0
dB ABOVE -100.2 dBm NOISE FLOOR	-43.8

ComStudy 2 Path Profile



K12PO

Lat: 33-35-34.4 N
 Lon: 117-08-53.9 W
 AMSL: 524 m
 Tower AGL: 28 m

WQJX508 & WQJX 536

Lat: 34-00-17.0 N
 Lon: 118-21-44.3 W
 AMSL: 151 m
 Tower AGL: 30 m

Profile Info

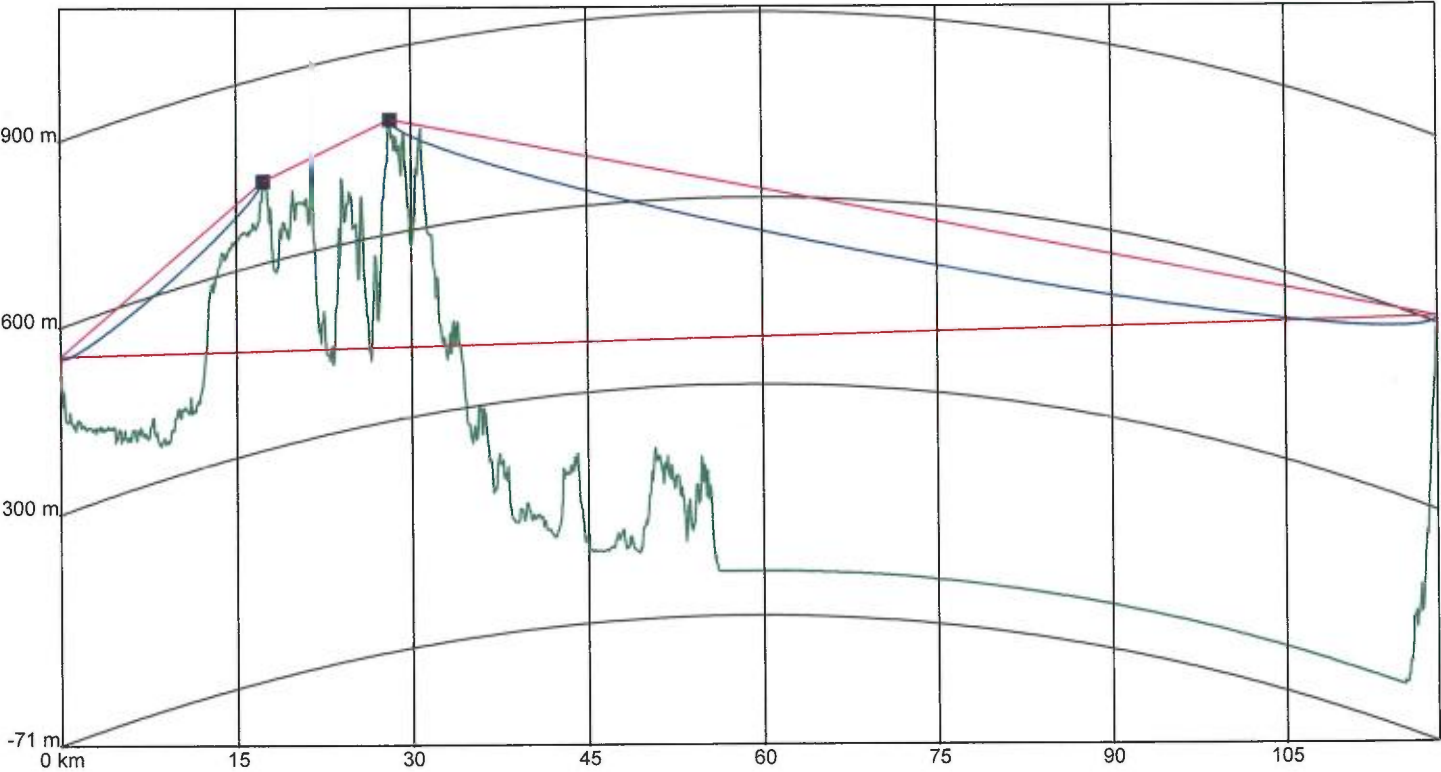
Distance: 121.15 Km
 Bearing: 292.54 deg
 # of points: 2000
 K value: 1.333
 Frequency: 479.0000
 Clearance: 0.6

Losses

Base Loss: 143.5 dB
 Fade Margin: N/A
 Diffraction: 21.4 dB
 Fresnel: 4.0 dB

K12PO CH 15 Path to	WQJX508
AZIMUTH BEARING TO RECEIVER	292
RELATIVE ERP TO 9 KW AT BEARING	0.143
ERP AT THAT BEARING kW	0.184041
ERP ADJUSTED FOR BANDWIDTH	0.000855
ERP dBm	29.3
PATH LOSS, dB	143.5
DIFFRACTION LOSS, dB	21.4
FRESNEL LOSS, dB	4
CALCULATED SIGNAL AT ANTENNA, dBm	-139.6
SIGNAL PLUS 8 dB ANTENNA GAIN	-131.6
dB ABOVE -100.2 dBm NOISE FLOOR	-31.4

ComStudy 2 Path Profile



K12PO

Lat: 33-35-34.4 N
Lon: 117-08-53.9 W
AMSL: 524 m
Tower AGL: 28 m

WQJX509 & WQJX 537

Lat: 33-23-12.0 N
Lon: 118-24-03.0 W
AMSL: 581 m
Tower AGL: 30 m

Profile Info

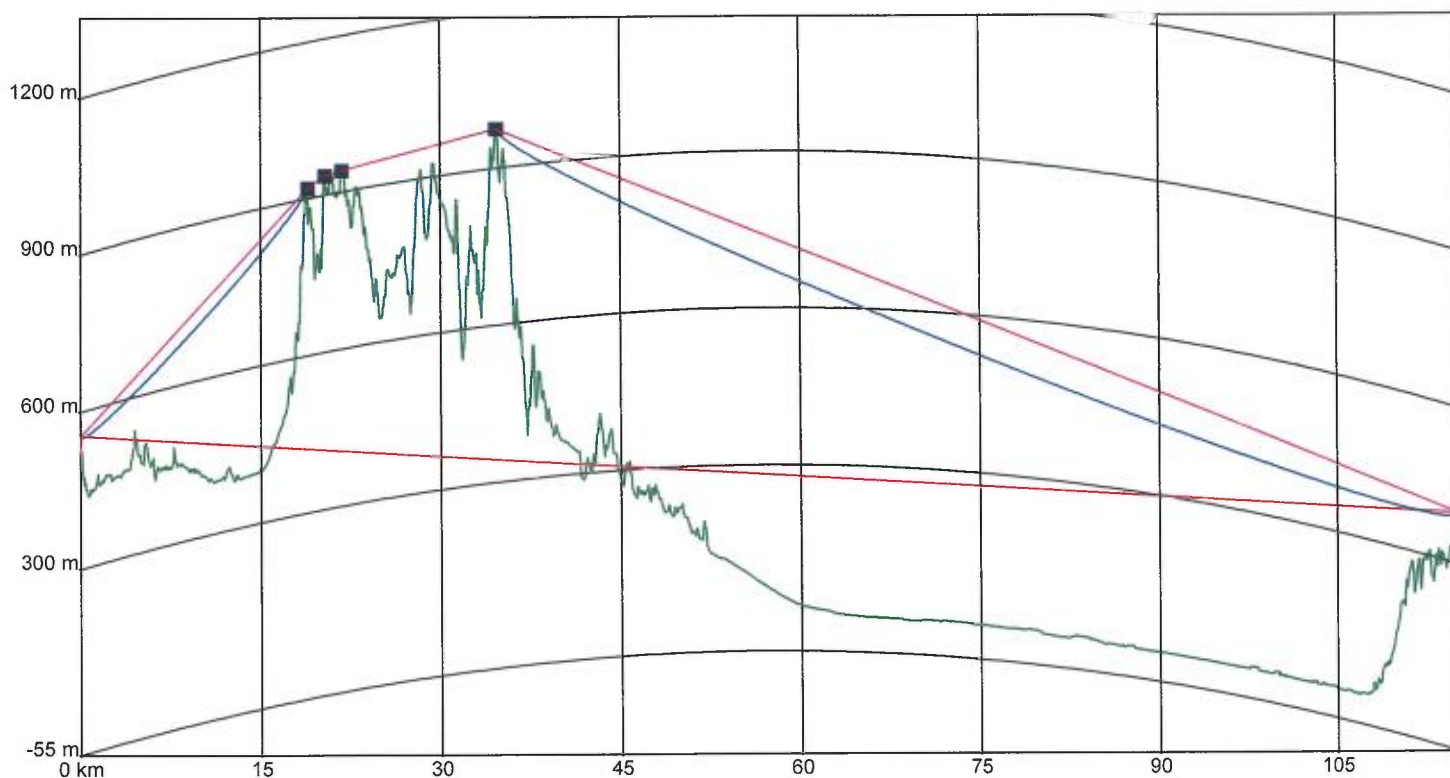
Distance: 118.38 Km
Bearing: 259.18 deg
of points: 2000
K value: 1.333
Frequency: 479.0000
Clearance: 0.6

Losses

Base Loss: 143.1 dB
Fade Margin: N/A
Diffraction: 30.4 dB
Fresnel: 6.5 dB

K12PO CH 15 Path to	WQJX509
AZIMUTH BEARING TO RECEIVER	259
RELATIVE ERP TO 9 KW AT BEARING	0.257
ERP AT THAT BEARING kW	0.594441
ERP ADJUSTED FOR BANDWIDTH	0.002762
ERP dBm	34.4
PATH LOSS, dB	143.1
DIFFRACTION LOSS, dB	30.4
FRESNEL LOSS, dB	6.5
CALCULATED SIGNAL AT ANTENNA, dBm	-145.6
SIGNAL PLUS 8 dB ANTENNA GAIN	-137.6
dB ABOVE -100.2 dBm NOISE FLOOR	-37.4

ComStudy 2 Path Profile



K12PO

Lat: 33-33-34.4 N
 Lon: 117-08-53.9 W
 AMSL: 524 m
 Tower AGL: 28 m

WQJX510 & WQJX 538

Lat: 33-46-06.0 N
 Lon: 118-22-36.0 W
 AMSL: 368 m
 Tower AGL: 30 m

Profile Info

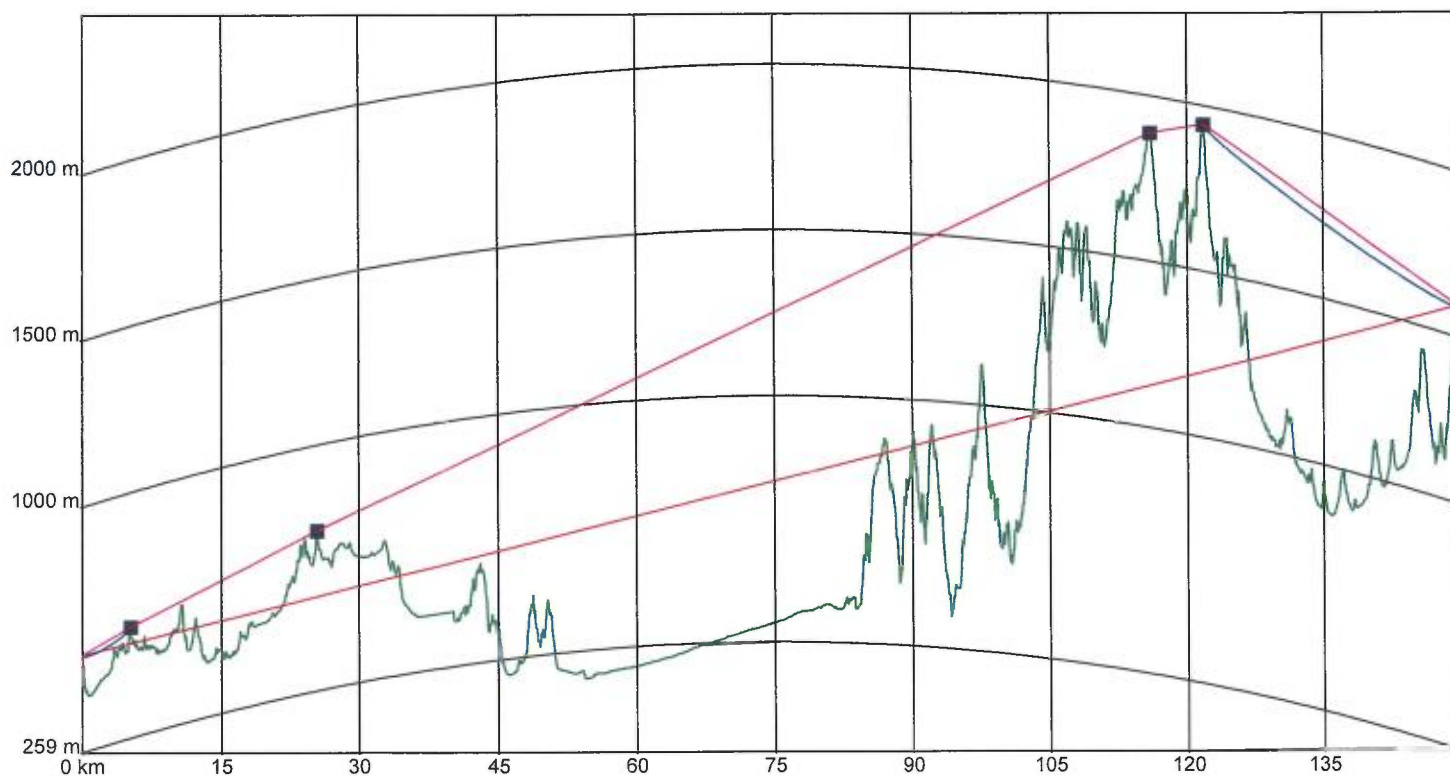
Distance: 115.31 Km
 Bearing: 280.08 deg
 # of points: 2000
 K value: 1.333
 Frequency: 479.0000
 Clearance: 0.6

Losses

Base Loss: 142.7 dB
 Fade Margin: N/A
 Diffraction: 33.6 dB
 Fresnel: 5.9 dB

K12PO CH 15 Path to	WQJX510
AZIMUTH BEARING TO RECEIVER	280
RELATIVE ERP TO 9 KW AT BEARING	0.178
ERP AT THAT BEARING kW	0.285156
ERP ADJUSTED FOR BANDWIDTH	0.001325
ERP dBm	31.2
PATH LOSS, dB	142.7
DIFFRACTION LOSS, dB	33.6
FRESNEL LOSS, dB	5.9
CALCULATED SIGNAL AT ANTENNA, dBm	-151.0
SIGNAL PLUS 8 dB ANTENNA GAIN	-143.0
dB ABOVE -100.2 dBm NOISE FLOOR	-42.8

ComStudy 2 Path Profile



K12PO

Lat: 33-35-34.4 N
 Lon: 117-08-53.9 W
 AMSL: 524 m
 Tower AGL: 28 m

WQJX511 & WQJX 539

Lat: 34-33-58.0 N
 Lon: 118-16-31.0 W
 AMSL: 1564 m
 Tower AGL: 30 m

Profile Info

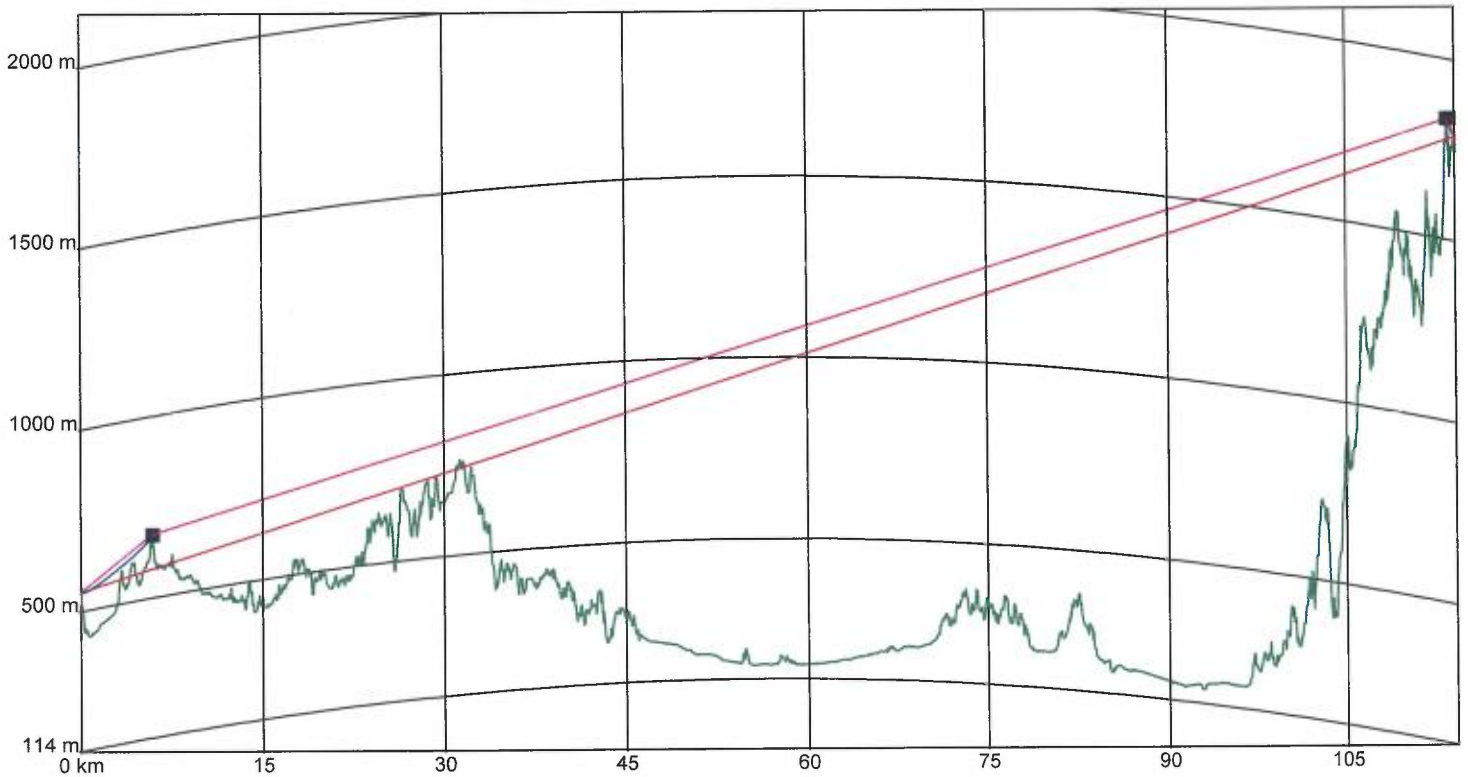
Distance: 149.92 Km
 Bearing: 316.51 deg
 # of points: 2000
 K value: 1.333
 Frequency: 479.0000
 Clearance: 0.6

Losses

Base Loss: 147.2 dB
 Fade Margin: N/A
 Diffraction: 26.7 dB
 Fresnel: 3.4 dB

K12PO CH 15 Path to	WQJX511
AZIMUTH BEARING TO RECEIVER	316
RELATIVE ERP TO 9 KW AT BEARING	0.141
ERP AT THAT BEARING KW	0.178929
ERP ADJUSTED FOR BANDWIDTH	0.000831
ERP dBm	29.2
PATH LOSS, dB	147.2
DIFFRACTION LOSS, dB	26.7
FRESNEL LOSS, dB	3.4
CALCULATED SIGNAL AT ANTENNA, dBm	-148.1
SIGNAL PLUS 8 dB ANTENNA GAIN	-140.1
dB ABOVE -100.2 dBm NOISE FLOOR	-39.9

ComStudy 2 Path Profile



K12PO

Lat: 33-35-34.4 N
 Lon: 117-08-53.9 W
 AMSL: 524 m
 Tower AGL: 28 m

WQJX512 & WQJX 540

Lat: 34-14-48.0 N
 Lon: 118-06-17.0 W
 AMSL: 1758 m
 Tower AGL: 30 m

Profile Info

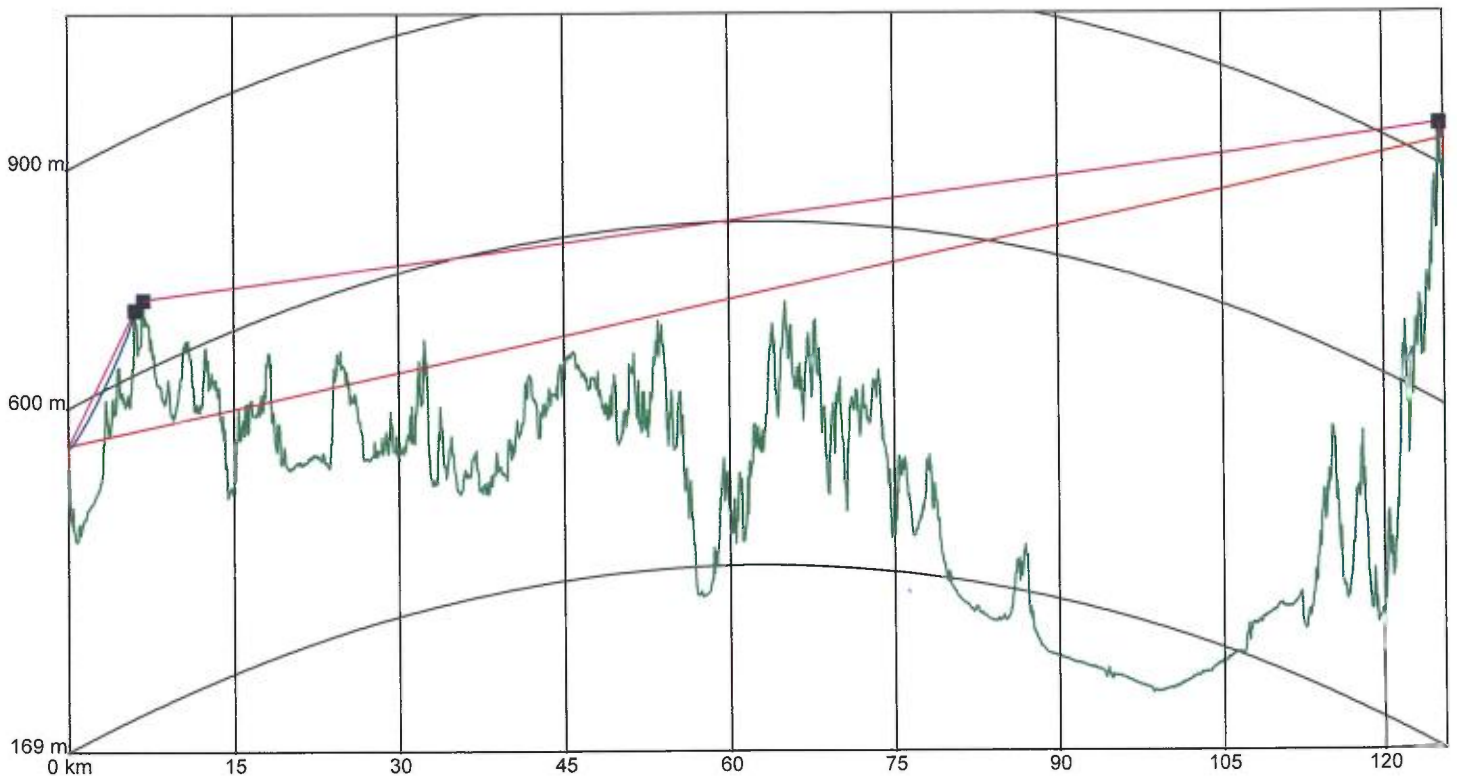
Distance: 114.32 Km
 Bearing: 309.75 deg
 # of points: 2000
 K value: 1.333
 Frequency: 479.0000
 Clearance: 0.6

Losses

Base Loss: 142.5 dB
 Fade Margin: N/A
 Diffraction: 14.3 dB
 Fresnel: 10.0 dB

K12PO CH 15 Path to	WQJX512
AZIMUTH BEARING TO RECEIVER	309
RELATIVE ERP TO 9 KW AT BEARING	0.129
ERP AT THAT BEARING kW	0.149769
ERP ADJUSTED FOR BANDWIDTH	0.000696
ERP dBm	28.4
PATH LOSS, dB	142.5
DIFFRACTION LOSS, dB	14.3
FRESNEL LOSS, dB	10
CALCULATED SIGNAL AT ANTENNA, dBm	-138.4
SIGNAL PLUS 8 dB ANTENNA GAIN	-130.4
dB ABOVE -100.2 dBm NOISE FLOOR	-30.2

ComStudy 2 Path Profile



K12PO

Lat: 33-35-34.4 N
 Lon: 117-08-53.9 W
 AMSL: 524 m
 Tower AGL: 28 m

WQJX513 & WQJX 541

Lat: 34-13-03.0 N
 Lon: 118-16-59.3 W
 AMSL: 904 m
 Tower AGL: 30 m

Profile Info

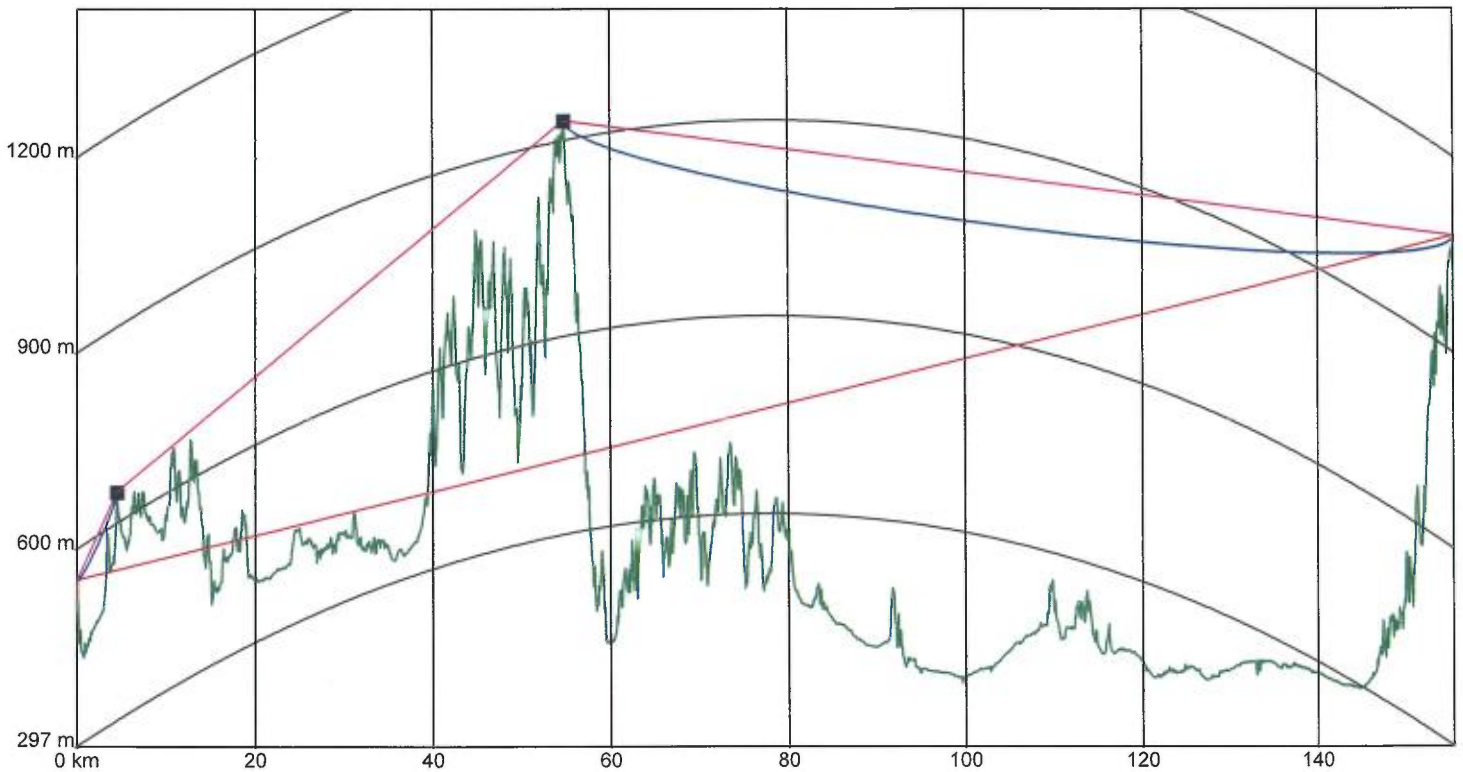
Distance: 125.65 Km
 Bearing: 303.87 deg
 # of points: 2000
 K value: 1.333
 Frequency: 479.0000
 Clearance: 0.6

Losses

Base Loss: 144.2 dB
 Fade Margin: N/A
 Diffraction: 38.4 dB
 Fresnel: 5.0 dB

K12PO CH 15 Path to	WQJX513
AZIMUTH BEARING TO RECEIVER	303
RELATIVE ERP TO 9 KW AT BEARING	0.127
ERP AT THAT BEARING kW	0.145161
ERP ADJUSTED FOR BANDWIDTH	0.000674
ERP dBm	28.3
PATH LOSS, dB	144.2
DIFFRACTION LOSS, dB	38.4
FRESNEL LOSS, dB	5
CALCULATED SIGNAL AT ANTENNA, dBm	-159.3
SIGNAL PLUS 8 dB ANTENNA GAIN	-151.3
dB ABOVE -100.2 dBm NOISE FLOOR	-51.1

ComStudy 2 Path Profile



K12PO

Lat: 33-35-34.4 N
 Lon: 117-08-53.9 W
 AMSL: 524 m
 Tower AGL: 28 m

WQJX514 & WQJX 542

Lat: 34-19-34.0 N
 Lon: 118-35-12.0 W
 AMSL: 1066 m
 Tower AGL: 12 m

Profile Info

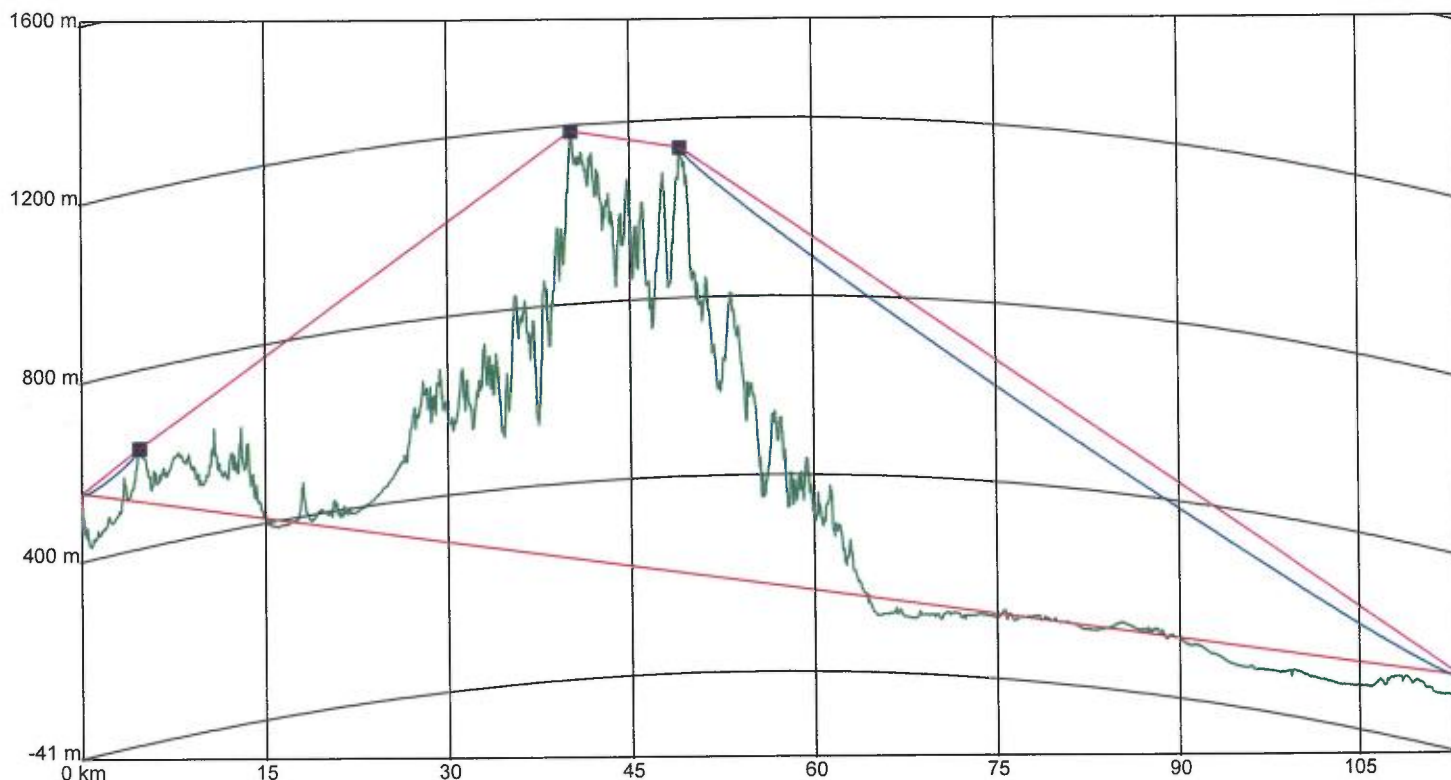
Distance: 155.69 Km
 Bearing: 301.97 deg
 # of points: 2000
 K value: 1.333
 Frequency: 479.0000
 Clearance: 0.6

Losses

Base Loss: 155.9 dB
 Fade Margin: N/A
 Diffraction: 37.7 dB
 Fresnel: 0.0 dB

K12PO CH 15 Path to	WQJX514
AZIMUTH BEARING TO RECEIVER	301
RELATIVE ERP TO 9 KW AT BEARING	0.128
ERP AT THAT BEARING kW	0.147456
ERP ADJUSTED FOR BANDWIDTH	0.000685
ERP dBm	28.4
PATH LOSS, dB	155.9
DIFFRACTION LOSS, dB	37.7
FRESNEL LOSS, dB	10
CALCULATED SIGNAL AT ANTENNA, dBm	-175.2
SIGNAL PLUS 8 dB ANTENNA GAIN	-167.2
dB ABOVE -100.2 dBm NOISE FLOOR	-67.0

ComStudy 2 Path Profile



K12PO

Lat: 33-35-34.4 N
 Lon: 117-08-53.9 W
 AMSL: 524 m
 Tower AGL: 28 m

WQJX516 & WQJX 544

Lat: 34-03-18.0 N
 Lon: 118-14-36.0 W
 AMSL: 100 m
 Tower AGL: 30 m

Profile Info

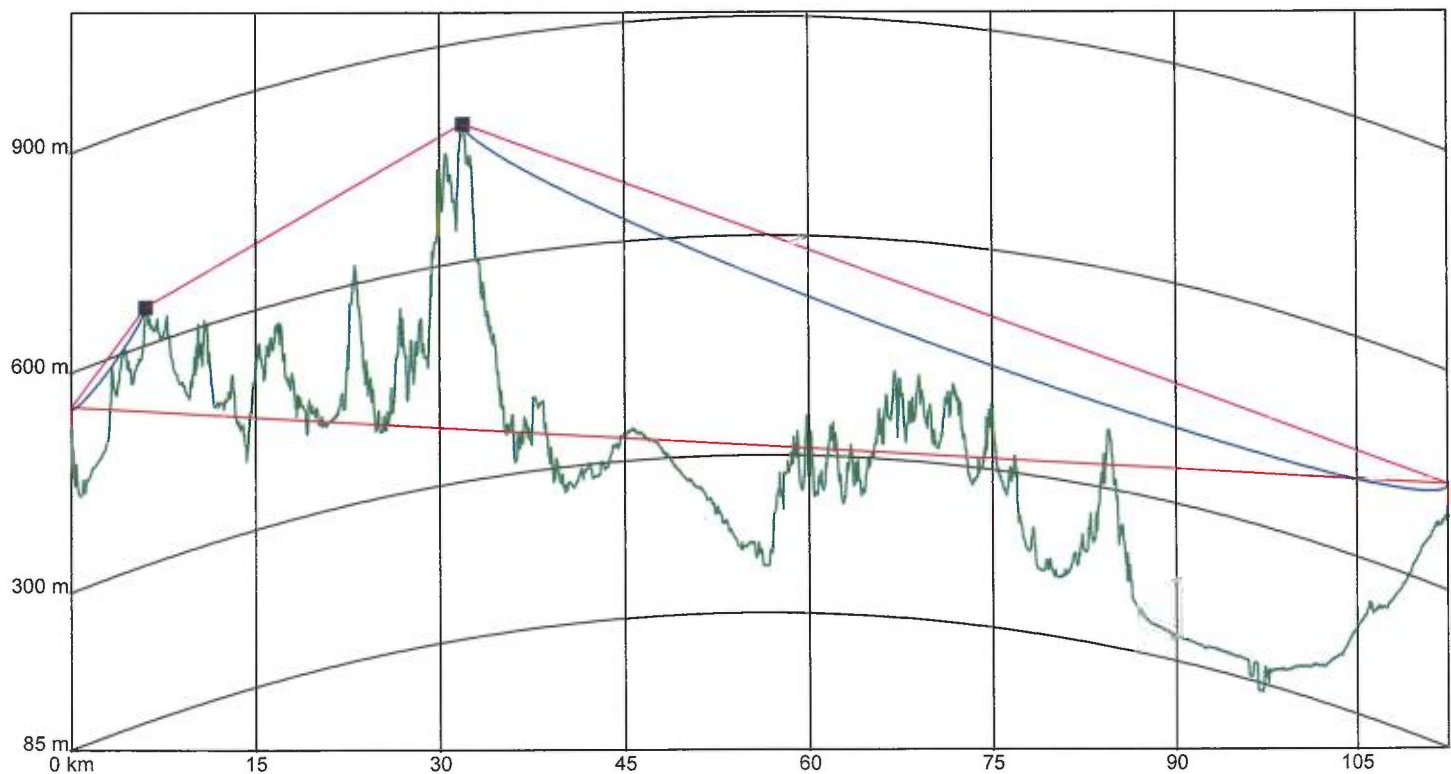
Distance: 113.44 Km
 Bearing: 297.23 deg
 # of points: 2000
 K value: 1.333
 Frequency: 479.0000
 Clearance: 0.6

Losses

Base Loss: 142.4 dB
 Fade Margin: N/A
 Diffraction: 21.1 dB
 Fresnel: 5.9 dB

K12PO CH 15 Path to	WQJX516
AZIMUTH BEARING TO RECEIVER	297
RELATIVE ERP TO 9 KW AT BEARING	0.133
ERP AT THAT BEARING kW	0.159201
ERP ADJUSTED FOR BANDWIDTH	0.00074
ERP dBm	28.7
PATH LOSS, dB	142.4
DIFFRACTION LOSS, dB	21.1
FRESNEL LOSS, dB	5.9
CALCULATED SIGNAL AT ANTENNA, dBm	-140.7
SIGNAL PLUS 8 dB ANTENNA GAIN	-132.7
dB ABOVE -100.2 dBm NOISE FLOOR	-32.5

ComStudy 2 Path Profile



K12PO

Lat: 33-35-34.4 N
Lon: 117-08-53.9 W
AMSL: 524 m
Tower AGL: 28 m

WQJX517 7 WQJX 545

Lat: 34-11-23.0 N
Lon: 118-07-59.3 W
AMSL: 414 m
Tower AGL: 30 m

Profile Info

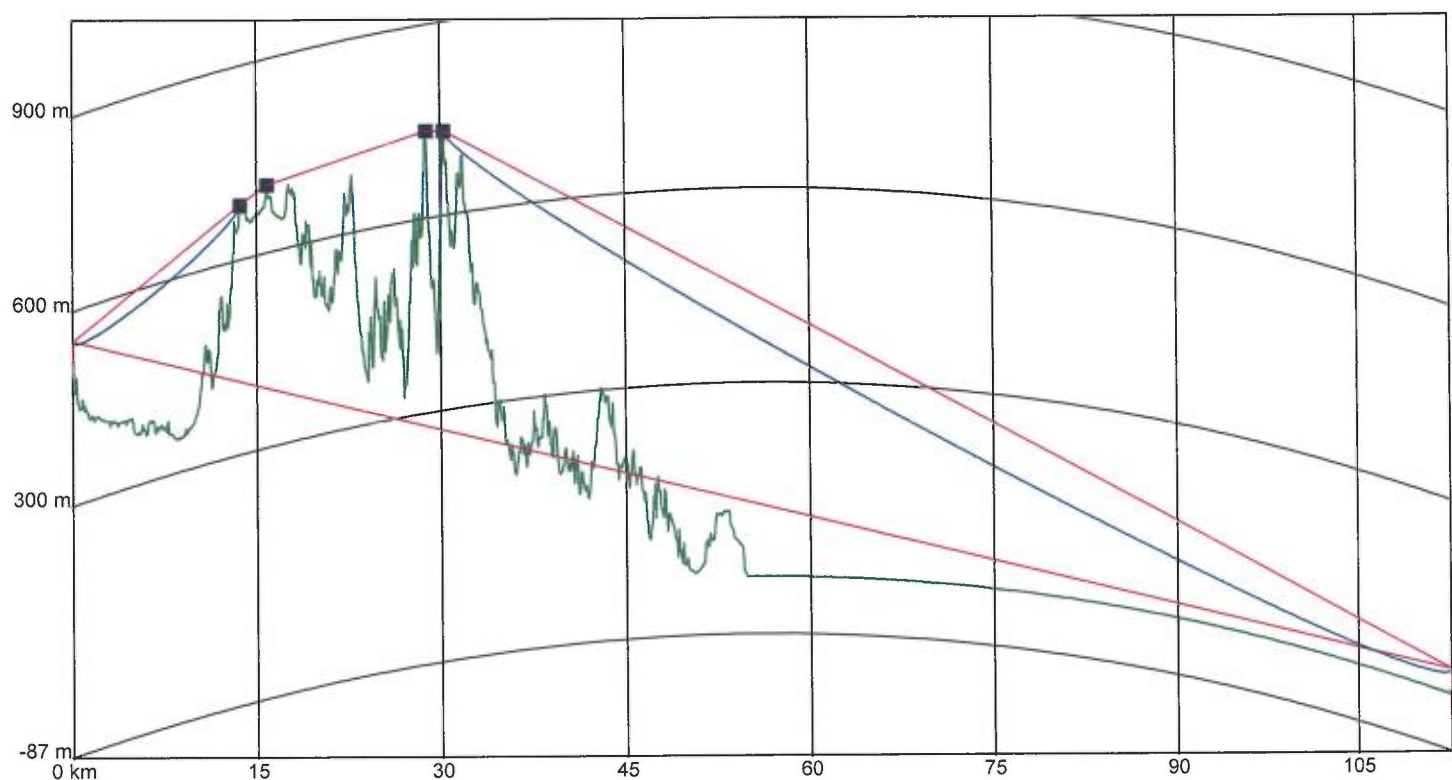
Distance: 112.53 Km
Bearing: 306.41 deg
of points: 2000
K value: 1.333
Frequency: 479.0000
Clearance: 0.6

Losses

Base Loss: 142.3 dB
Fade Margin: N/A
Diffraction: 32.7 dB
Fresnel: 2.8 dB

K12PO CH 15 Path to	WQJX517
AZIMUTH BEARING TO RECEIVER	306
RELATIVE ERP TO 9 KW AT BEARING	0.127
ERP AT THAT BEARING kW	0.145161
ERP ADJUSTED FOR BANDWIDTH	0.000674
ERP dBm	28.3
PATH LOSS, dB	142.3
DIFFRACTION LOSS, dB	32.7
FRESNEL LOSS, dB	2.8
CALCULATED SIGNAL AT ANTENNA, dBm	-149.5
SIGNAL PLUS 8 dB ANTENNA GAIN	-141.5
dB ABOVE -100.2 dBm NOISE FLOOR	-41.3

ComStudy 2 Path Profile



K12PO

Lat: 33-35-34.4 N
Lon: 117-08-53.9 W
AMSL: 524 m
Tower AGL: 28 m

WQJX518 & WQJX 546

Lat: 33-20-38.1 N
Lon: 118-19-35.3 W
AMSL: 9 m
Tower AGL: 30 m

Profile Info

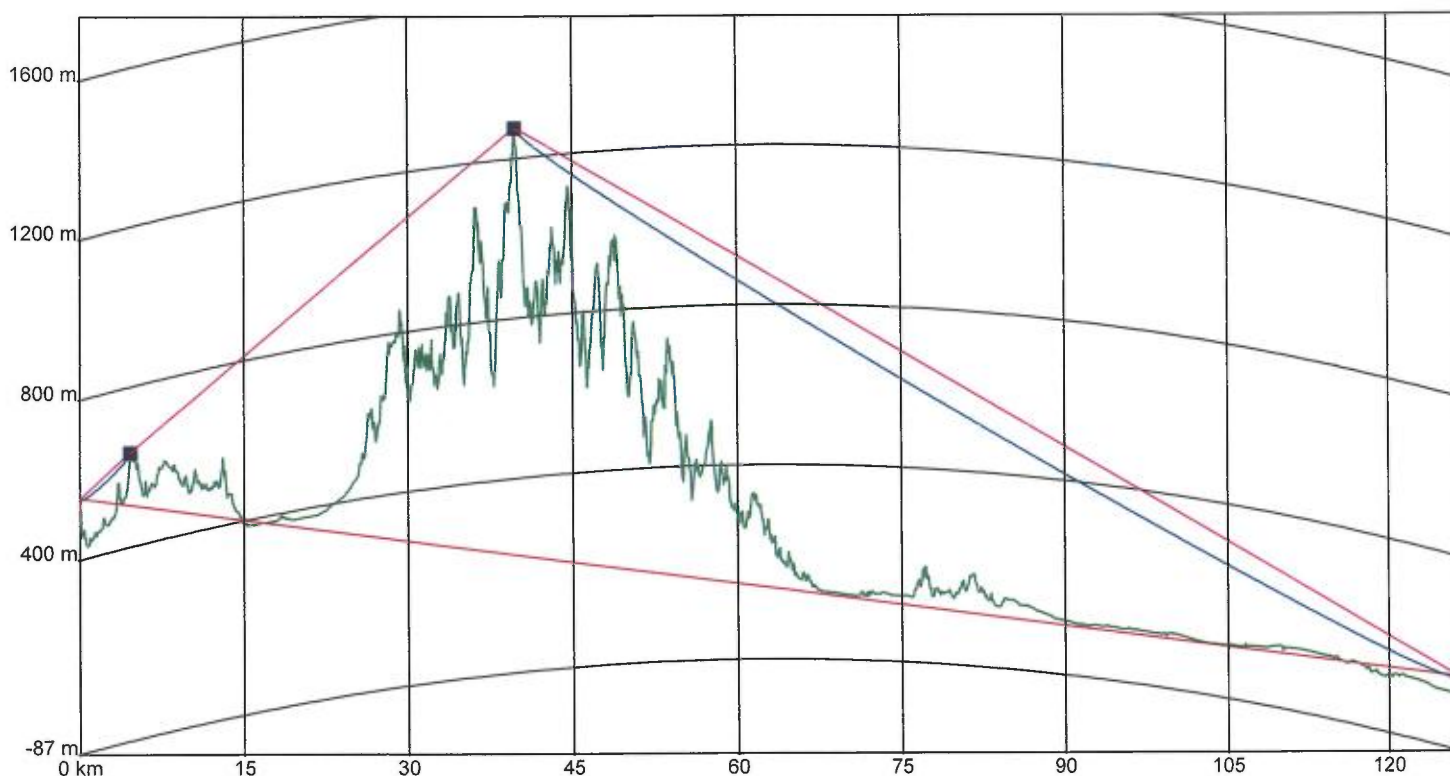
Distance: 112.72 Km
Bearing: 256.11 deg
of points: 2000
K value: 1.333
Frequency: 479.0000
Clearance: 0.6

Losses

Base Loss: 142.3 dB
Fade Margin: N/A
Diffraction: 37.7 dB
Fresnel: 5.8 dB

K12PO CH 15 Path to	WQJX518
AZIMUTH BEARING TO RECEIVER	256
RELATIVE ERP TO 9 KW AT BEARING	0.272
ERP AT THAT BEARING kW	0.665856
ERP ADJUSTED FOR BANDWIDTH	0.003094
ERP dBm	34.9
PATH LOSS, dB	142.3
DIFFRACTION LOSS, dB	37.7
FRESNEL LOSS, dB	5.8
CALCULATED SIGNAL AT ANTENNA, dBm	-150.9
SIGNAL PLUS 8 dB ANTENNA GAIN	-142.9
dB ABOVE -100.2 dBm NOISE FLOOR	-42.7

ComStudy 2 Path Profile



K12PO

Lat: 33-35-34.4 N
Lon: 117-08-53.9 W
AMSL: 524 m
Tower AGL: 28 m

WQJX519 & WQJX 547

Lat: 34-05-01.0 N
Lon: 118-23-01.3 W
AMSL: 68 m
Tower AGL: 30 m

Profile Info

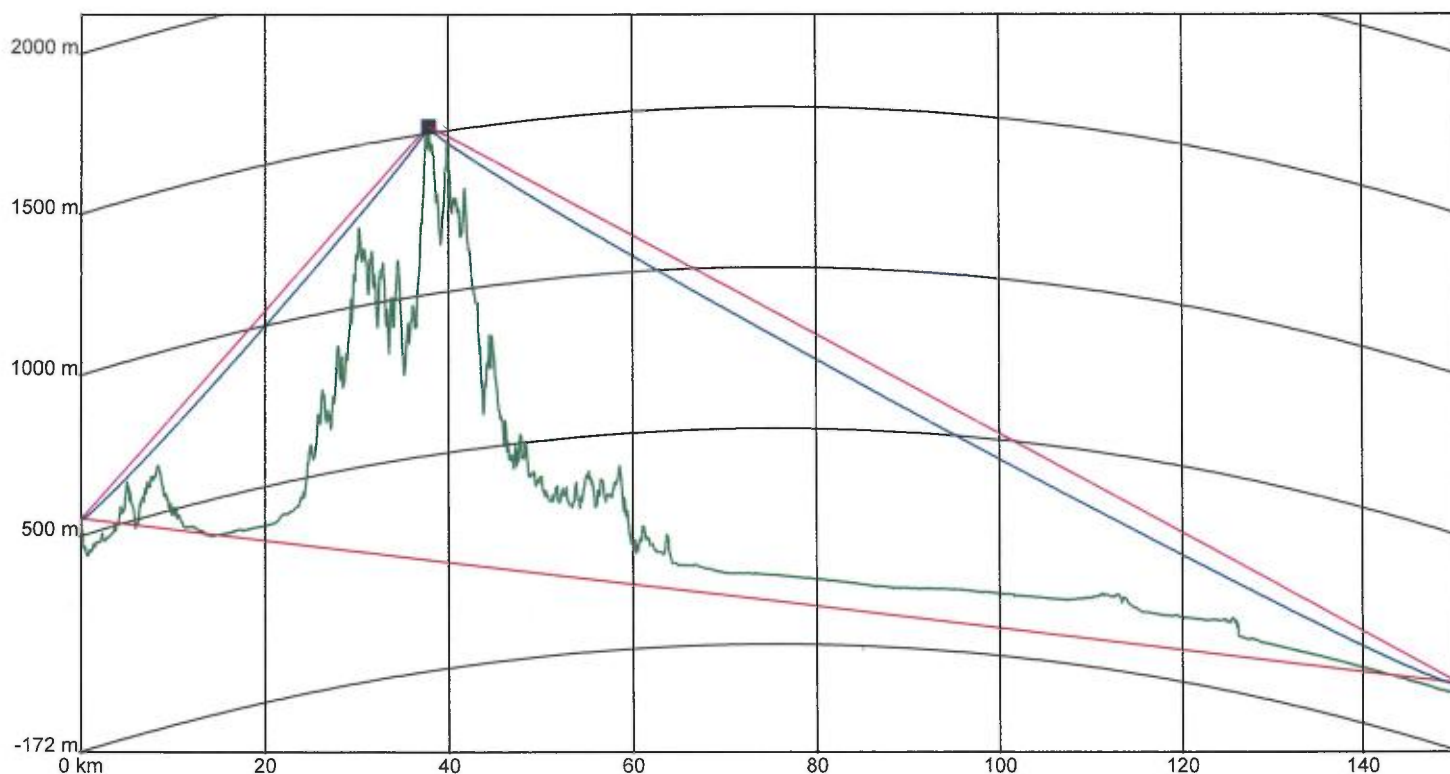
Distance: 126.46 Km
Bearing: 295.90 deg
of points: 2000
K value: 1.333
Frequency: 479.0000
Clearance: 0.6

Losses

Base Loss: 144.3 dB
Fade Margin: N/A
Diffraction: 24.3 dB
Fresnel: 0.7 dB

K12PO CH 15 Path to	WQJX519
AZIMUTH BEARING TO RECEIVER	295
RELATIVE ERP TO 9 KW AT BEARING	0.137
ERP AT THAT BEARING kW	0.168921
ERP ADJUSTED FOR BANDWIDTH	0.000785
ERP dBm	28.9
PATH LOSS, dB	144.3
DIFFRACTION LOSS, dB	24.3
FRESNEL LOSS, dB	0.7
CALCULATED SIGNAL AT ANTENNA, dBm	-140.4
SIGNAL PLUS 8 dB ANTENNA GAIN	-132.4
dB ABOVE -100.2 dBm NOISE FLOOR	-32.2

ComStudy 2 Path Profile



K12PO

Lat: 33-35-34.4 N
 Lon: 117-08-53.9 W
 AMSL: 524 m
 Tower AGL: 28 m

WQJX520 & WQJX 548

Lat: 34-02-12.0 N
 Lon: 118-41-22.3 W
 AMSL: 7 m
 Tower AGL: 30 m

Profile Info

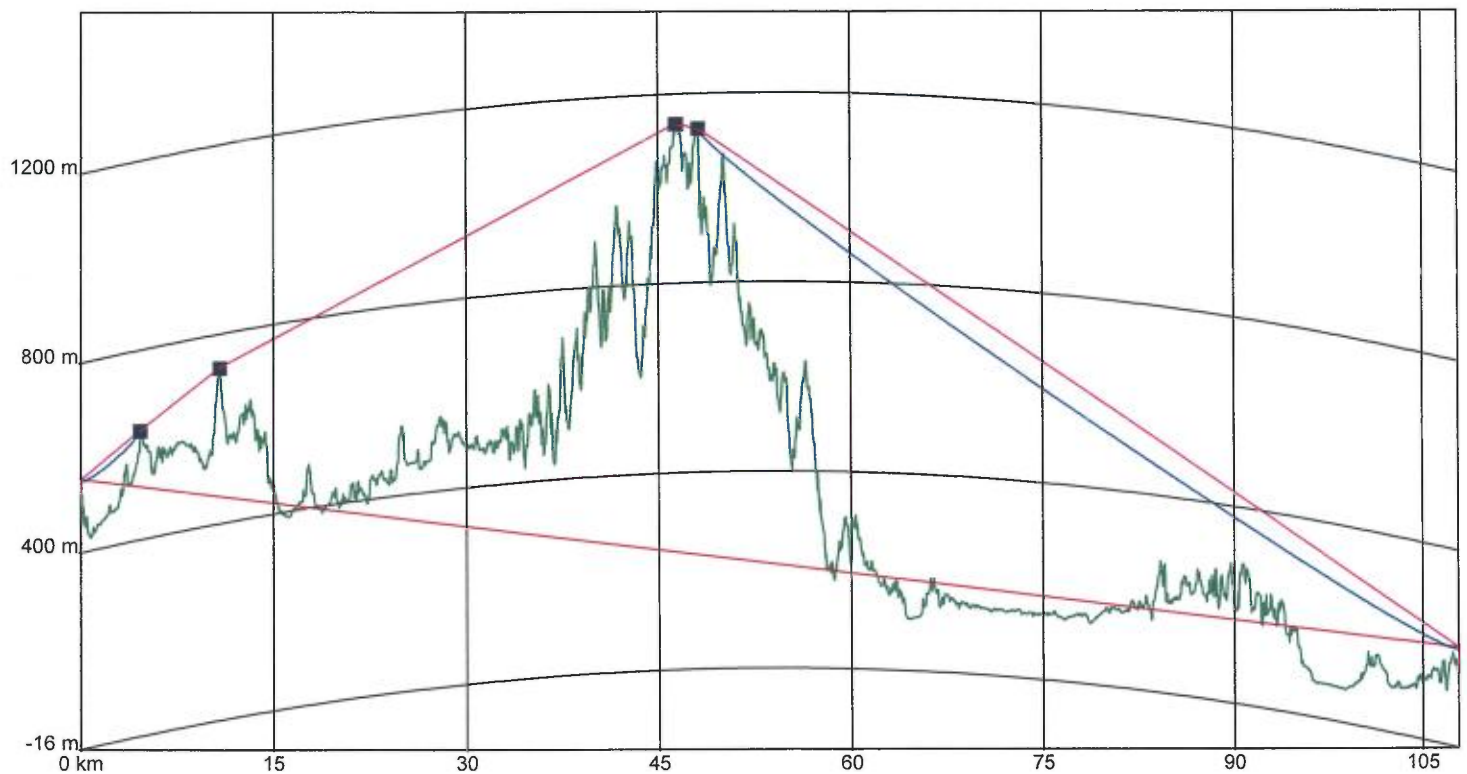
Distance: 150.67 Km
 Bearing: 289.54 deg
 # of points: 2000
 K value: 1.333
 Frequency: 479.0000
 Clearance: 0.6

Losses

Base Loss: 147.3 dB
 Fade Margin: N/A
 Diffraction: 22.9 dB
 Fresnel: 4.6 dB

K12PO CH 15 Path to	WQJX520
AZIMUTH BEARING TO RECEIVER	289
RELATIVE ERP TO 9 KW AT BEARING	0.151
ERP AT THAT BEARING kW	0.205209
ERP ADJUSTED FOR BANDWIDTH	0.000953
ERP dBm	29.8
PATH LOSS, dB	147.3
DIFFRACTION LOSS, dB	22.9
FRESNEL LOSS, dB	4.6
CALCULATED SIGNAL AT ANTENNA, dBm	-145.0
SIGNAL PLUS 8 dB ANTENNA GAIN	-137.0
dB ABOVE -100.2 dBm NOISE FLOOR	-36.8

ComStudy 2 Path Profile



K12PO

Lat: 33-35-34.4 N
 Lon: 117-08-53.9 W
 AMSL: 524 m
 Tower AGL: 28 m

WQJX521 & WQJX 549

Lat: 34-03-22.0 N
 Lon: 118-10-27.0 W
 AMSL: 139 m
 Tower AGL: 55 m

Profile Info

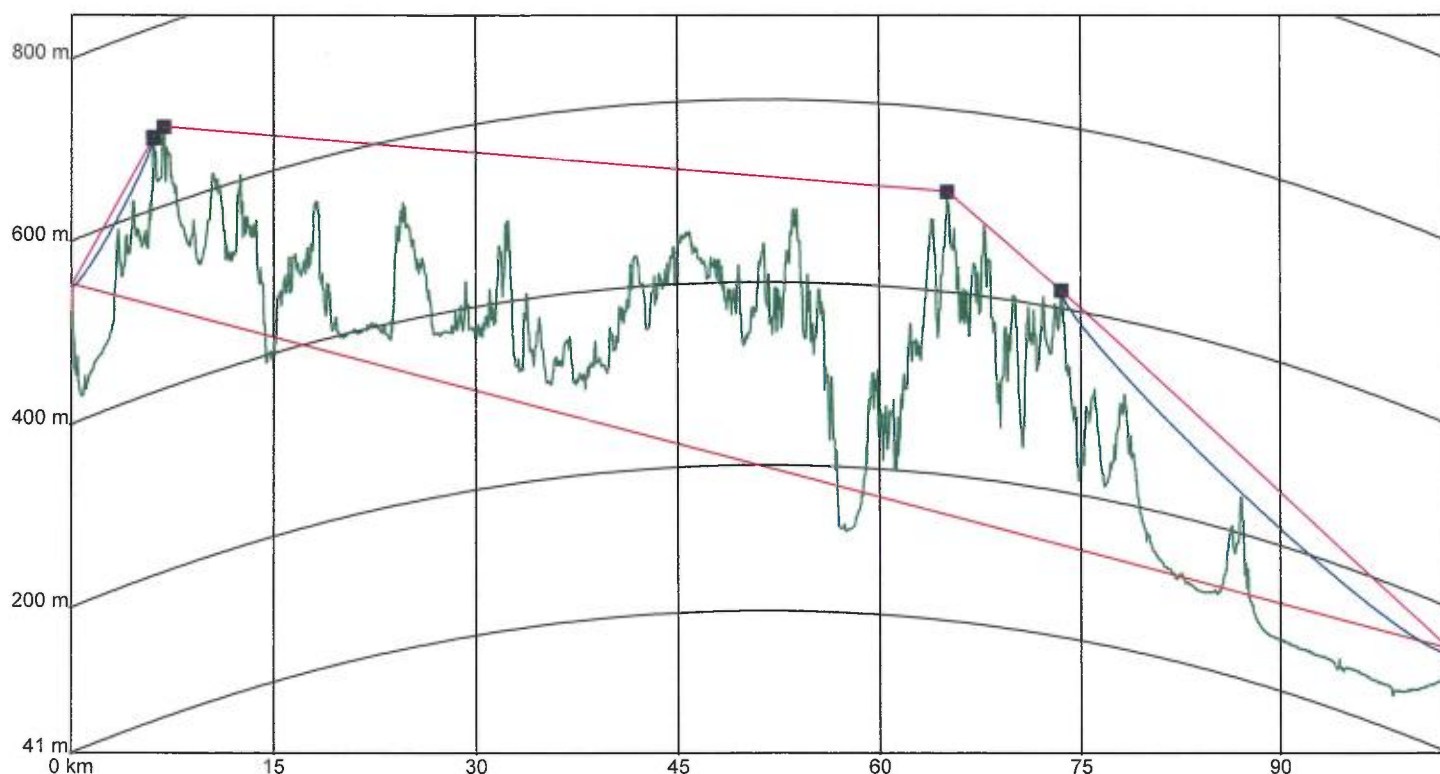
Distance: 107.84 Km
 Bearing: 298.81 deg
 # of points: 2000
 K value: 1.333
 Frequency: 479.0000
 Clearance: 0.6

Losses

Base Loss: 136.3 dB
 Fade Margin: N/A
 Diffraction: 33.4 dB
 Fresnel: 0.0 dB

K12PO CH 15 Path to	WQJX521
AZIMUTH BEARING TO RECEIVER	298
RELATIVE ERP TO 9 KW AT BEARING	0.132
ERP AT THAT BEARING kW	0.156816
ERP ADJUSTED FOR BANDWIDTH	0.000729
ERP dBm	28.6
PATH LOSS, dB	136.3
DIFFRACTION LOSS, dB	33.4
FRESNEL LOSS, dB	0
CALCULATED SIGNAL AT ANTENNA, dBm	-141.1
SIGNAL PLUS 8 dB ANTENNA GAIN	-133.1
dB ABOVE -100.2 dBm NOISE FLOOR	-32.9

ComStudy 2 Path Profile



K12PO

Lat: 33-35-34.4 N
 Lon: 117-08-53.9 W
 AMSL: 524 m
 Tower AGL: 28 m

WQJX522 & WQJX 550

Lat: 34-06-11.0 N
 Lon: 118-04-36.0 W
 AMSL: 125 m
 Tower AGL: 30 m

Profile Info

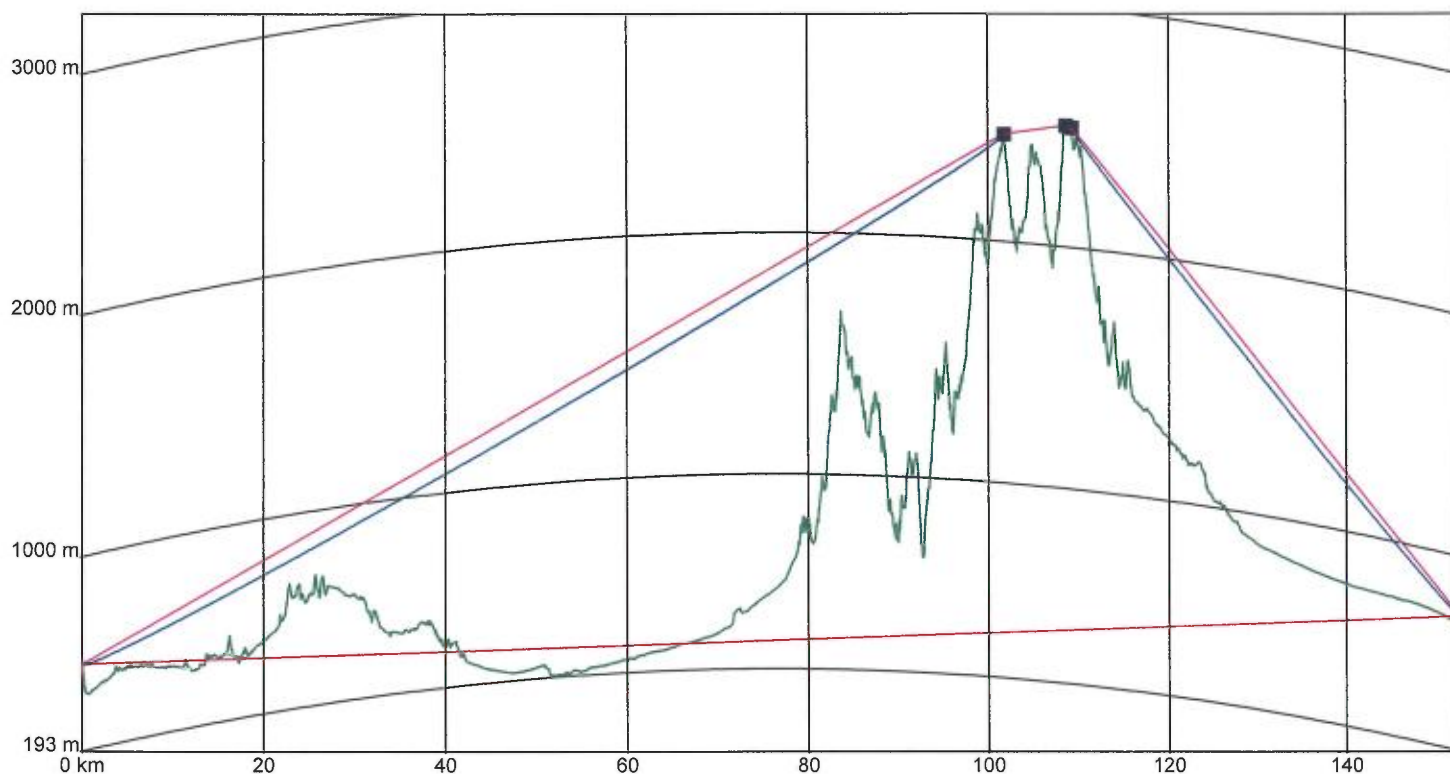
Distance: 102.79 Km
 Bearing: 303.75 deg
 # of points: 2000
 K value: 1.333
 Frequency: 479.0000
 Clearance: 0.6

Losses

Base Loss: 140.7 dB
 Fade Margin: N/A
 Diffraction: 64.6 dB
 Fresnel: 0.6 dB

K12PO CH 15 Path to	WQJX522
AZIMUTH BEARING TO RECEIVER	303
RELATIVE ERP TO 9 KW AT BEARING	0.127
ERP AT THAT BEARING kW	0.145161
ERP ADJUSTED FOR BANDWIDTH	0.000674
ERP dBm	28.3
PATH LOSS, dB	140.7
DIFFRACTION LOSS, dB	64.6
FRESNEL LOSS, dB	0.6
CALCULATED SIGNAL AT ANTENNA, dBm	-177.6
SIGNAL PLUS 8 dB ANTENNA GAIN	-169.6
dB ABOVE -100.2 dBm NOISE FLOOR	-69.4

ComStudy 2 Path Profile



K12PO

Lat: 33-35-34.4 N
Lon: 117-08-53.9 W
AMSL: 524 m
Tower AGL: 28 m

WQJX523 & WQJX 551

Lat: 34-41-18.0 N
Lon: 118-08-57.0 W
AMSL: 721 m
Tower AGL: 30 m

Profile Info

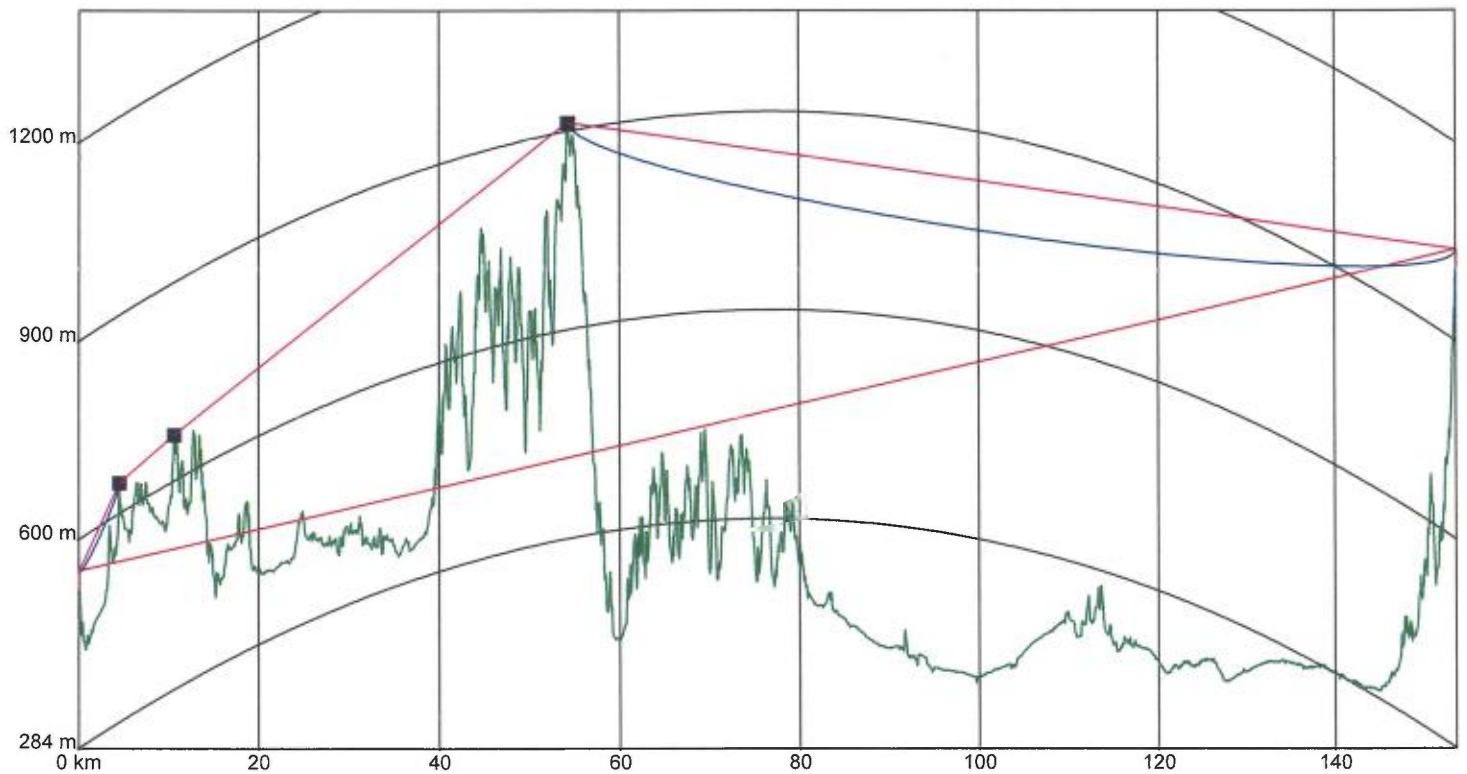
Distance: 152.69 Km
Bearing: 323.18 deg
of points: 2000
K value: 1.333
Frequency: 479.0000
Clearance: 0.6

Losses

Base Loss: 147.6 dB
Fade Margin: N/A
Diffraction: 22.5 dB
Fresnel: 5.3 dB

K12PO CH 15 Path to	WQJX523
AZIMUTH BEARING TO RECEIVER	323
RELATIVE ERP TO 9 KW AT BEARING	0.16
ERP AT THAT BEARING kW	0.2304
ERP ADJUSTED FOR BANDWIDTH	0.00107
ERP dBm	30.3
PATH LOSS, dB	147.6
DIFFRACTION LOSS, dB	22.5
FRESNEL LOSS, dB	5.3
CALCULATED SIGNAL AT ANTENNA, dBm	-145.1
SIGNAL PLUS 8 dB ANTENNA GAIN	-137.1
dB ABOVE -100.2 dBm NOISE FLOOR	-36.9

ComStudy 2 Path Profile



K12PO

Lat: 33-35-34.4 N
 Lon: 117-08-53.9 W
 AMSL: 524 m
 Tower AGL: 28 m

WQJX524 & WQJX 552

Lat: 34-19-12.0 N
 Lon: 118-33-56.0 W
 AMSL: 1008 m
 Tower AGL: 30 m

Profile Info

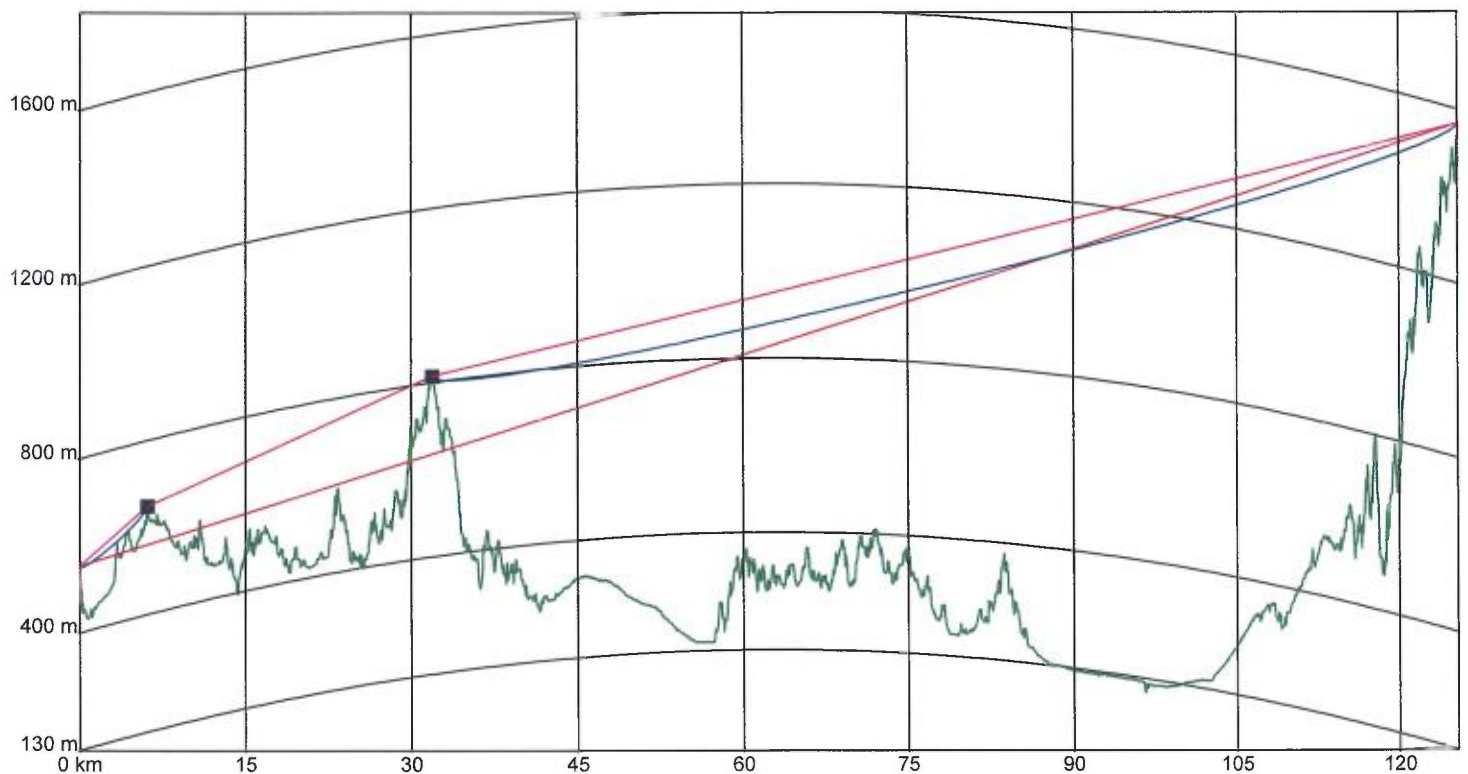
Distance: 153.68 Km
 Bearing: 302.13 deg
 # of points: 2000
 K value: 1.333
 Frequency: 479.0000
 Clearance: 0.6

Losses

Base Loss: 147.7 dB
 Fade Margin: N/A
 Diffraction: 46.2 dB
 Fresnel: 0.0 dB

K12PO CH 15 Path to	WQJX524
AZIMUTH BEARING TO RECEIVER	302
RELATIVE ERP TO 9 KW AT BEARING	0.128
ERP AT THAT BEARING kW	0.147456
ERP ADJUSTED FOR BANDWIDTH	0.000685
ERP dBm	28.4
PATH LOSS, dB	147.7
DIFFRACTION LOSS, dB	46.2
FRESNEL LOSS, dB	0
CALCULATED SIGNAL AT ANTENNA, dBm	-165.5
SIGNAL PLUS 8 dB ANTENNA GAIN	-157.5
dB ABOVE -100.2 dBm NOISE FLOOR	-57.3

ComStudy 2 Path Profile



K12PO

Lat: 33-35-34.4 N
 Lon: 117-08-53.9 W
 AMSL: 524 m
 Tower AGL: 28 m

WQJX525 & WQJX 553

Lat: 34-16-07.0 N
 Lon: 118-14-11.3 W
 AMSL: 1537 m
 Tower AGL: 30 m

Profile Info

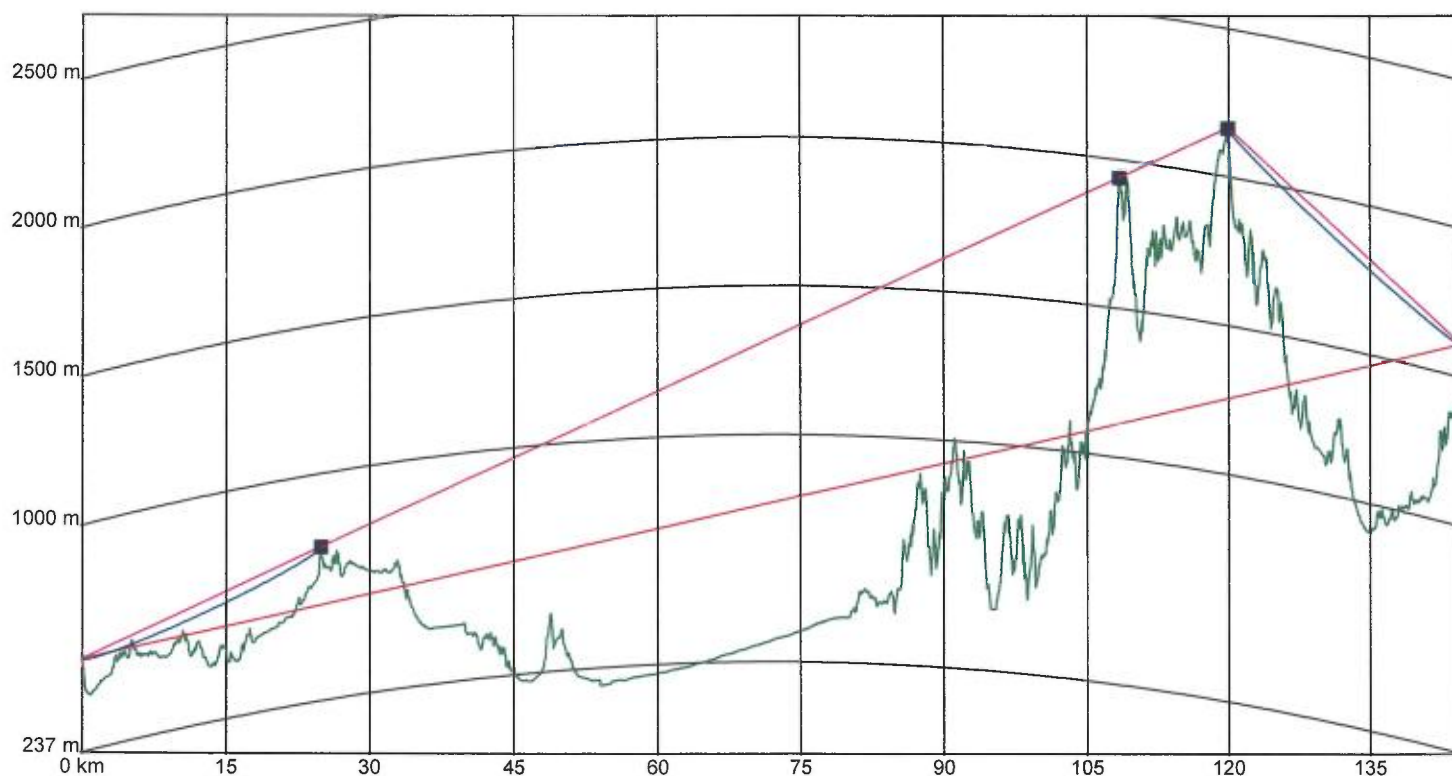
Distance: 125.38 Km
 Bearing: 307.11 deg
 # of points: 2000
 K value: 1.333
 Frequency: 479.0000
 Clearance: 0.6

Losses

Base Loss: 144.1 dB
 Fade Margin: N/A
 Diffraction: 14.7 dB
 Fresnel: 3.4 dB

K12PO CH 15 Path to	WQJX525
AZIMUTH BEARING TO RECEIVER	307
RELATIVE ERP TO 9 KW AT BEARING	0.127
ERP AT THAT BEARING kW	0.145161
ERP ADJUSTED FOR BANDWIDTH	0.000674
ERP dBm	28.3
PATH LOSS, dB	144.1
DIFFRACTION LOSS, dB	14.7
FRESNEL LOSS, dB	3.4
CALCULATED SIGNAL AT ANTENNA, dBm	-133.9
SIGNAL PLUS 8 dB ANTENNA GAIN	-125.9
dB ABOVE -100.2 dBm NOISE FLOOR	-25.7

ComStudy 2 Path Profile



K12PO

Lat: 33-35-34.4 N
 Lon: 117-08-53.9 W
 AMSL: 524 m
 Tower AGL: 28 m

WQJX526 & WQJX 554

Lat: 34-32-48.0 N
 Lon: 118-13-03.0 W
 AMSL: 1579 m
 Tower AGL: 30 m

Profile Info

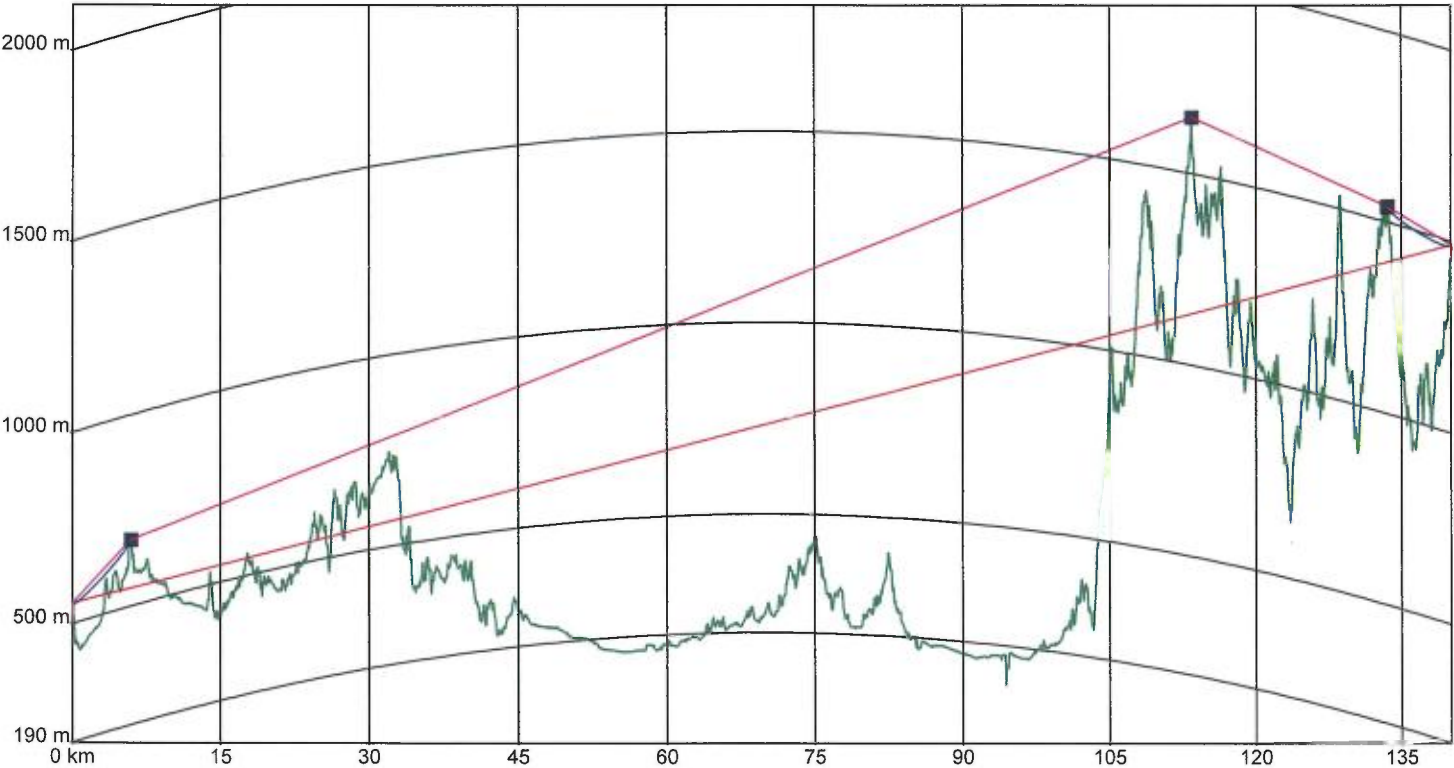
Distance: 144.71 Km
 Bearing: 317.42 deg
 # of points: 2000
 K value: 1.333
 Frequency: 479.0000
 Clearance: 0.6

Losses

Base Loss: 146.6 dB
 Fade Margin: N/A
 Diffraction: 26.2 dB
 Fresnel: 3.1 dB

K12PO CH 15 Path to	WQJX526
AZIMUTH BEARING TO RECEIVER	317
RELATIVE ERP TO 9 KW AT BEARING	0.143
ERP AT THAT BEARING kW	0.184041
ERP ADJUSTED FOR BANDWIDTH	0.000855
ERP dBm	29.3
PATH LOSS, dB	146.6
DIFFRACTION LOSS, dB	26.2
FRESNEL LOSS, dB	3.1
CALCULATED SIGNAL AT ANTENNA, dBm	-146.6
SIGNAL PLUS 8 dB ANTENNA GAIN	-138.6
dB ABOVE -100.2 dBm NOISE FLOOR	-38.4

ComStudy 2 Path Profile



K12PO

Lat: 33-35-34.4 N
Lon: 117-08-53.9 W
AMSL: 524 m
Tower AGL: 28 m

WQJX527 & WQJX 556

Lat: 34-23-10.0 N
Lon: 118-19-46.3 W
AMSL: 1457 m
Tower AGL: 33 m

Profile Info

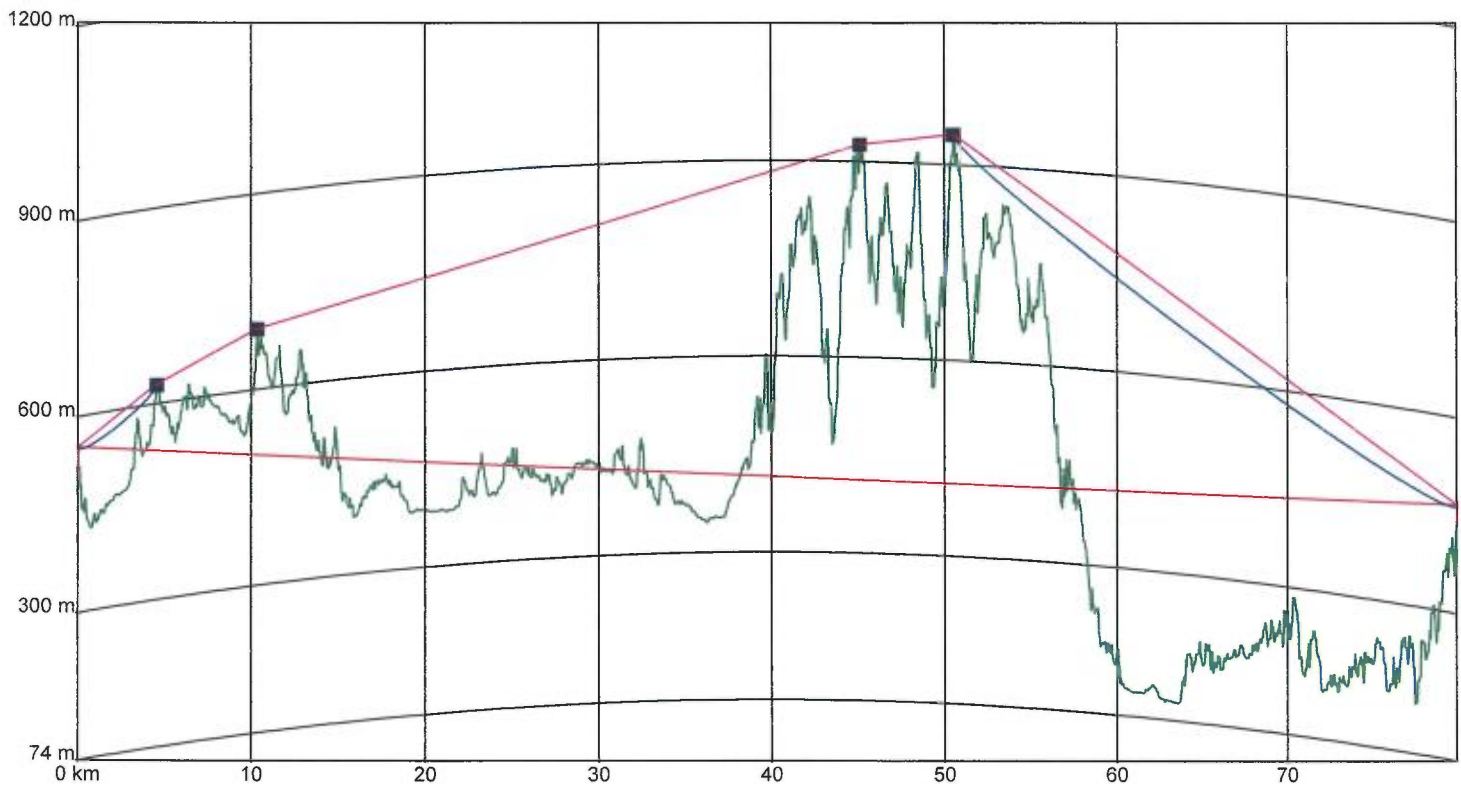
Distance: 140.12 Km
Bearing: 309.33 deg
of points: 2000
K value: 1.333
Frequency: 479.0000
Clearance: 0.6

Losses

Base Loss: 145.2 dB
Fade Margin: N/A
Diffraction: 31.9 dB
Fresnel: 5.7 dB

K12PO CH 15 Path to	WQJX527
AZIMUTH BEARING TO RECEIVER	309
RELATIVE ERP TO 9 KW AT BEARING	0.129
ERP AT THAT BEARING kW	0.149769
ERP ADJUSTED FOR BANDWIDTH	0.000696
ERP dBm	28.4
PATH LOSS, dB	145.2
DIFFRACTION LOSS, dB	31.9
FRESNEL LOSS, dB	5.7
CALCULATED SIGNAL AT ANTENNA, dBm	-154.4
SIGNAL PLUS 8 dB ANTENNA GAIN	-146.4
dB ABOVE -100.2 dBm NOISE FLOOR	-46.2

ComStudy 2 Path Profile



K12PO

Lat: 33-35-34.4 N
Lon: 117-08-53.9 W
AMSL: 524 m
Tower AGL: 28 m

WQJX528 & WQJX 557

Lat: 33-57-20.0 N
Lon: 117-53-42.2 W
AMSL: 435 m
Tower AGL: 30 m

Profile Info

Distance: 79.93 Km
Bearing: 300.50 deg
of points: 2000
K value: 1.333
Frequency: 479.0000
Clearance: 0.6

Losses

Base Loss: 136.3 dB
Fade Margin: N/A
Diffraction: 28.5 dB
Fresnel: 7.4 dB

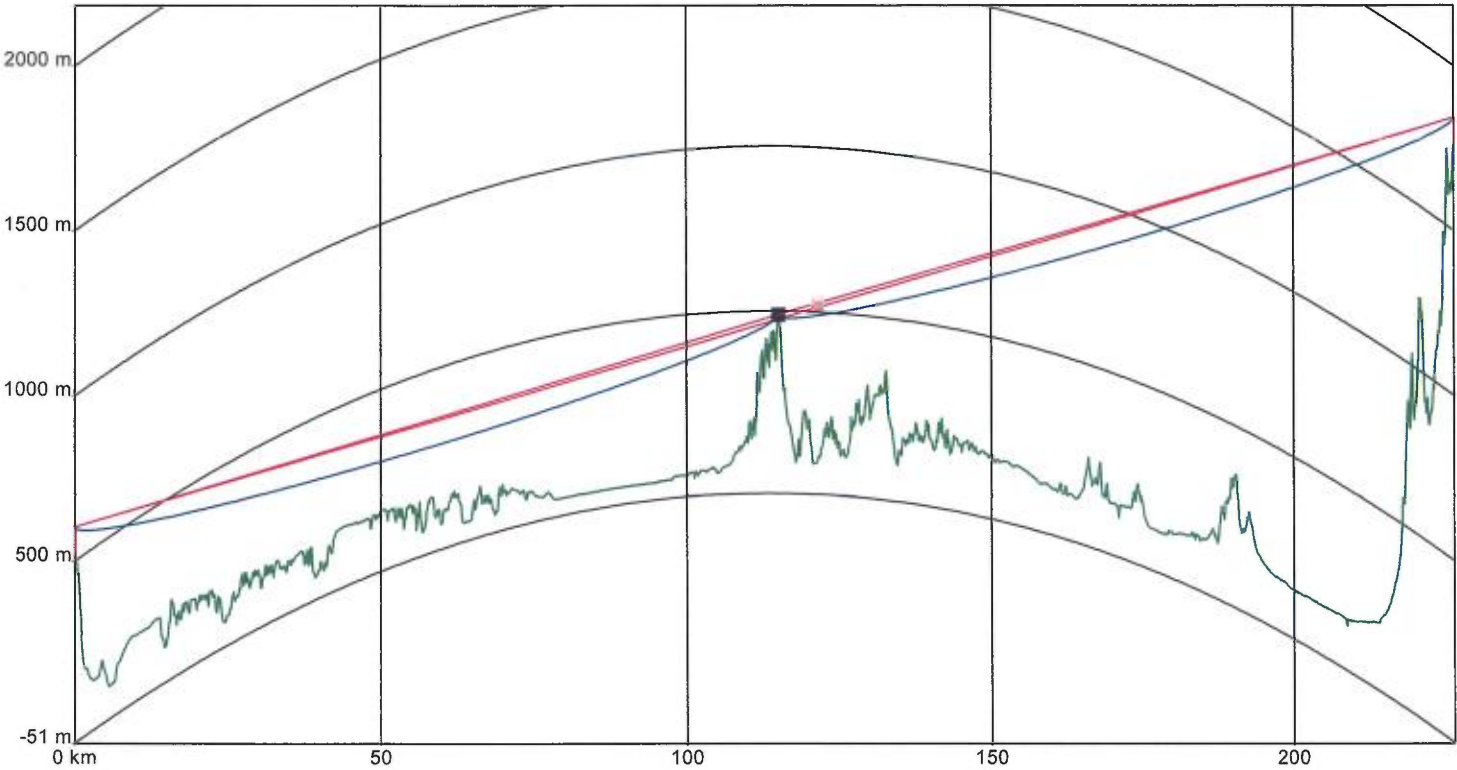
K12PO CH 15 Path to	WQJX528
AZIMUTH BEARING TO RECEIVER	300
RELATIVE ERP TO 9 KW AT BEARING	0.129
ERP AT THAT BEARING kW	0.149769
ERP ADJUSTED FOR BANDWIDTH	0.000696
ERP dBm	28.4
PATH LOSS, dB	136.3
DIFFRACTION LOSS, dB	28.5
FRESNEL LOSS, dB	7.4
CALCULATED SIGNAL AT ANTENNA, dBm	-143.8
SIGNAL PLUS 8 dB ANTENNA GAIN	-135.8
dB ABOVE -100.2 dBm NOISE FLOOR	-35.6

Figure 2**K12PO to LA County Sites dBm Below Noise Floor**

Page	dBm below noise floor	Call Signs
1	-21.1	WQJX500
4	-23.9	WQJX503 WQJX531
2	-24.8	WQJX501 WQJX529
25	-25.7	WQJX525 WQJX553
7	-29.9	WQJX506 WQJX534
13	-30.2	WQJX512 WQJX540
9	-31.4	WQJX508 WQJX536
19	-32.2	WQJX519 WQJX547
16	-32.5	WQJX516 WQJX544
5	-32.7	WQJX504 WQJX532
21	-32.9	WQJX521 WQJX549
28	-35.6	WQJX528 WQJX557
20	-36.8	WQJX520 WQJX548
23	-36.9	WQJX523 WQJX551
10	-37.4	WQJX509 WQJX537
26	-38.7	WQJX526 WQJX554
12	-39.9	WQJX511 WQJX539
17	-41.3	WQJX517 WQJX545
3	-41.4	WWJX502 WQJX530
18	-42.7	WQJX518 WQJX546
11	-42.8	WQJX510 WQJX538
8	-43.8	WQJX507 WQJX535
27	-46.2	WQJX527 WQJX556
14	-51.1	WQJX513 WQJX541
24	-57.3	WQJX524 WQJX552
15	-67	WQJX514 WQJX542
22	-69.4	WQJX522 WQJX550
6	-82.9	WQJX505 WQJX533

Figure 3

ComStudy 2 Path Profile



XHTJB

Lat: 32-28-26.5 N
Lon: 116-53-49.2 W
AMSL: 500 m
Tower AGL: 102 m

Disappointment

Lat: 34-14-48.0 N
Lon: 118-06-16.7 W
AMSL: 1758 m
Tower AGL: 84 m

Profile Info

Distance: 226.75 Km
Bearing: 330.69 deg
of points: 2000
K value: 1.333
Frequency: 477.2500
Clearance: 0.6

Losses

Base Loss: 134.3 dB
Fade Margin: N/A
Diffraction: 6.4 dB
Fresnel: 5.5 dB

XHTJB Path to	Disppoint
AZIMUTH BEARING TO RECEIVER	330
RELATIVE ERP TO 79 KW AT BEARING	0.199
ERP AT THAT BEARING kW	3.128479
ERP ADJUSTED FOR BANDWIDTH	0.014535
ERP dBm	41.6
PATH LOSS, dB	134.3
DIFFRACTION LOSS, dB	6.4
FRESNEL LOSS, dB	5.5
CALCULATED SIGNAL AT ANTENNA, dBm	-104.6
SIGNAL PLUS 8 dB ANTENNA GAIN	-96.6
dB ABOVE -100.2 dBm NOISE FLOOR	3.6

CERTIFICATE OF SERVICE

I, Annetta Washington, a secretary at Wilkinson Barker Knauer, LLP, certify that on this 26th day of June 2019, I caused the foregoing Opposition to Petition to Deny to be served by first-class mail on the following:

Alan S. Tilles
Shulman Rogers Gandal Pordy & Ecker, P.A.
12505 Park Potomac Avenue, 6th Floor
Potomac, MD 20854
Counsel to the County of Los Angeles



Annetta Washington