

SES Government Solutions, Inc. ("SES-GS")
Application for Experimental Special Temporary Authority

Narrative Statement

(1) Name, address, phone number (also e-mail address and facsimile number, if available) of the applicant.

SES-GS Representative and Stop Buzzer Contact:

Eric Gunzelman

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Counsel to SES-GS: Karis Hastings, SatCom Law LLC, karis@satcomlaw.com

(2) Description of why an STA is needed.

SES Government Solutions, Inc. ("SES-GS"), a wholly-owned subsidiary of SES S.A., provides satellite solutions to U.S. government customers to meet mission critical needs. SES-GS seeks an experimental special temporary authority ("STA") in order to test and demonstrate a terminal in auto-acquirer mode communicating with the AMC-21 geostationary orbit satellite at 124.9° W.L. in conventional Ku-band spectrum.²

Specifically, SES-GS requests STA to perform testing and demonstration of a 1.2 meter AvL Technologies Inc. 1280 model antenna with the AMC-21 satellite to assess the antenna's suitability to support U.S. armed forces deployed around the world. SES-GS will conduct the tests at and around locations in Sterling and Bristow, Virginia. The antenna will communicate with AMC-21 using conventional Ku-band spectrum, transmitting in the 14.0-14.5 GHz frequencies and receiving in the 11.7-12.2 GHz frequencies.

(3) Time and Date of Proposed Operation

SES-GS requests expedited processing to allow testing to begin by June 15, 2021. The timing is driven by the need to support U.S. armed forces around the world. The terminal will be evaluated to determine useability to auto-acquire upload and download files and data at higher speeds and lower latencies than previously possible. With this type of capability, the men and women in our armed forces will be better connected, providing a higher probability of mission success as well as morale, welfare and

¹ Given the ongoing COVID-19 pandemic, SES-GS requests that all correspondence be sent electronically, as physical mail to this address may not be checked regularly.

² The Commission has authorized the Gibraltar-licensed AMC-21 satellite to serve the United States under Call Sign S2676. See File No. SAT-PPL-20080929-00203, granted Aug. 6, 2008.

recreation connectivity if needed. SES-GS is seeking to expedite the testing and demonstration process in order to speed the delivery of this valuable service to armed services personnel.

(4) Class(es) of station (fixed, mobile, fixed and mobile) and call sign of station (if applicable).

The transmitting antenna will operate as a fixed satellite earth station.

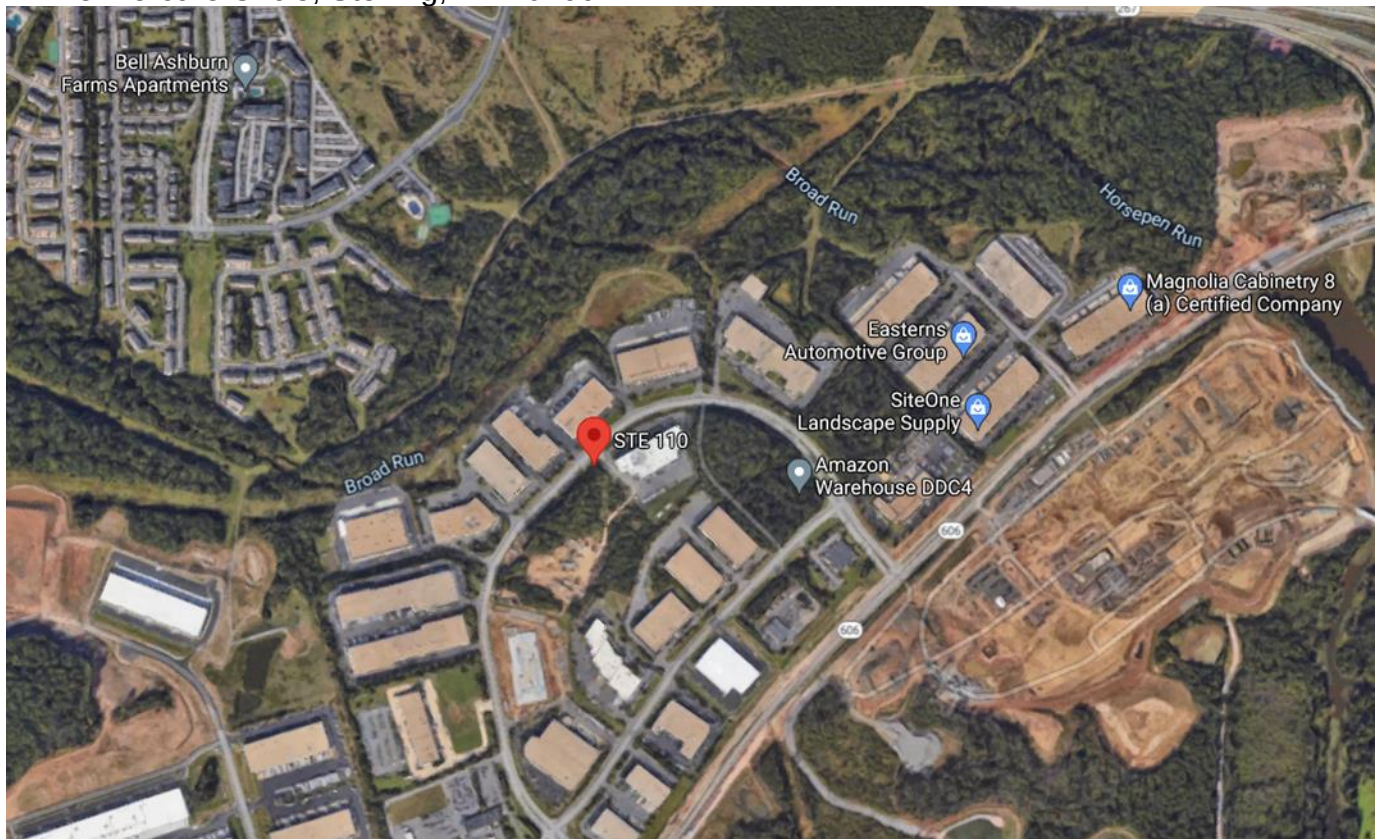
(5) Description of the location(s) and, if applicable, geographical coordinates of the proposed operation.

SES-GS will operate the terminal in fixed mode at and around two locations: Sterling, VA, and Bristow, VA. During testing the antennas will be positioned within a 0.5-mile (0.8 km) radius of the designated coordinates listed below:

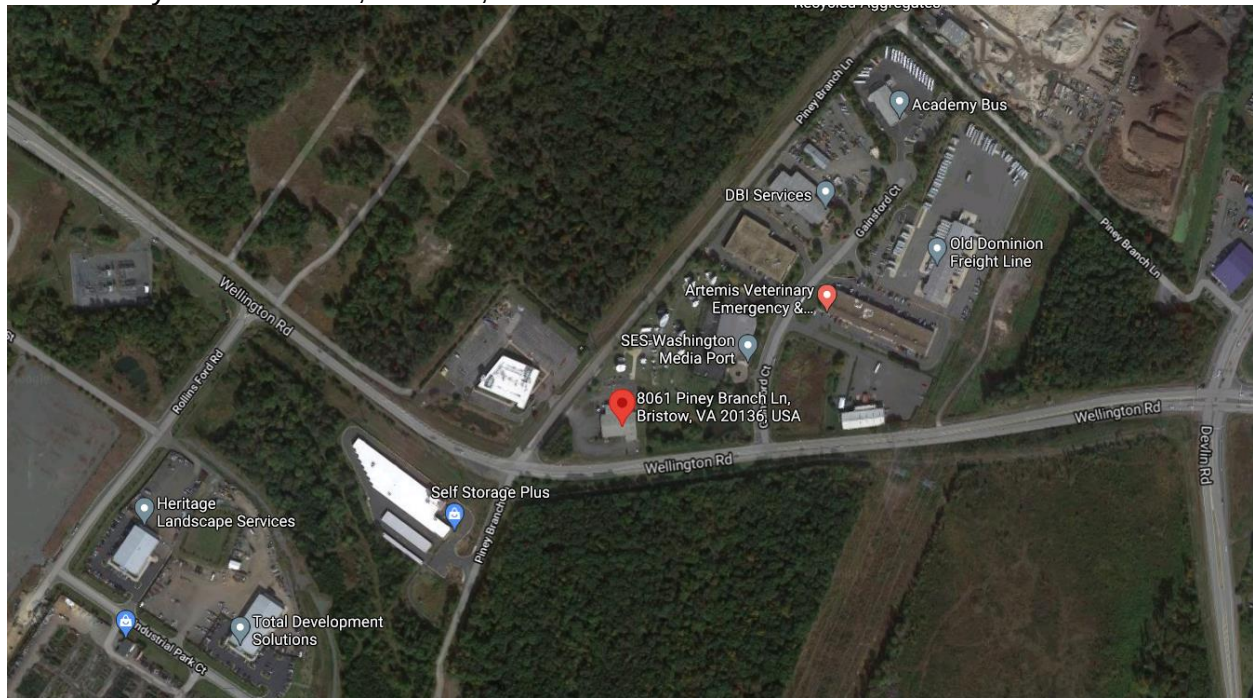
1. Fixed testing within 0.8 km of 38° 59' 12" N 77° 28' 42" W (Sterling, VA)
2. Fixed testing within 0.8 km of 38° 47' 00" N 77° 34' 19" W (Bristow, VA)

Maps of the sites are provided below.

44225 Mercure Circle, Sterling, VA 20166:



8061 Piney Branch Lane, Bristow, VA 20136:



(6) Transmit equipment to be used, including name of manufacturer, model, and number of units.

AvL 1280 KVH, 1 unit.

(7) Maximum effective radiated power (ERP) or equivalent isotropically radiated power (EIRP).

The transmitted power is 8 Watts. The peak ERP is 125385 Watts.

For all operations, SES-GS will comply with the radiofrequency radiation exposure limits in 47 C.F.R. § 1.1310 and apply the measures recommended in the FCC's OET Bulletin 65 to ensure compliance.

(8) Emission Designator

36M0G7D

(9) Overall height of antenna of antenna structure above the ground (if greater than 6 meters above the ground or an existing structure, see part 17 of this Chapter concerning notification to the FAA).

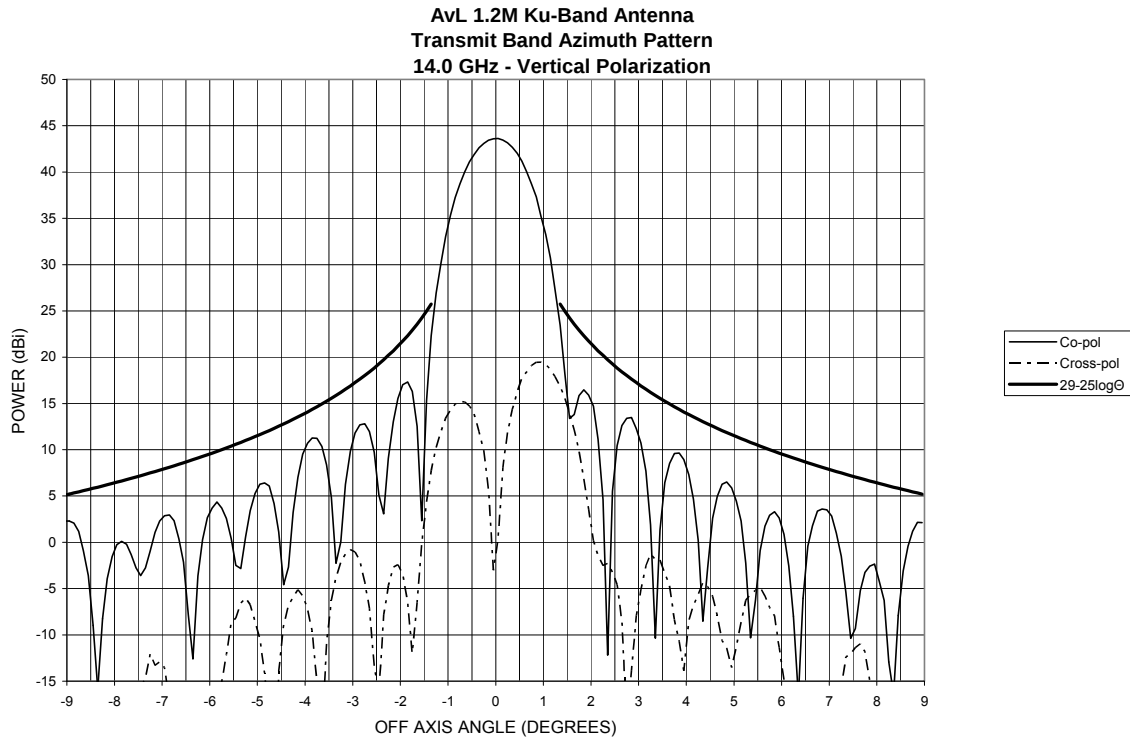
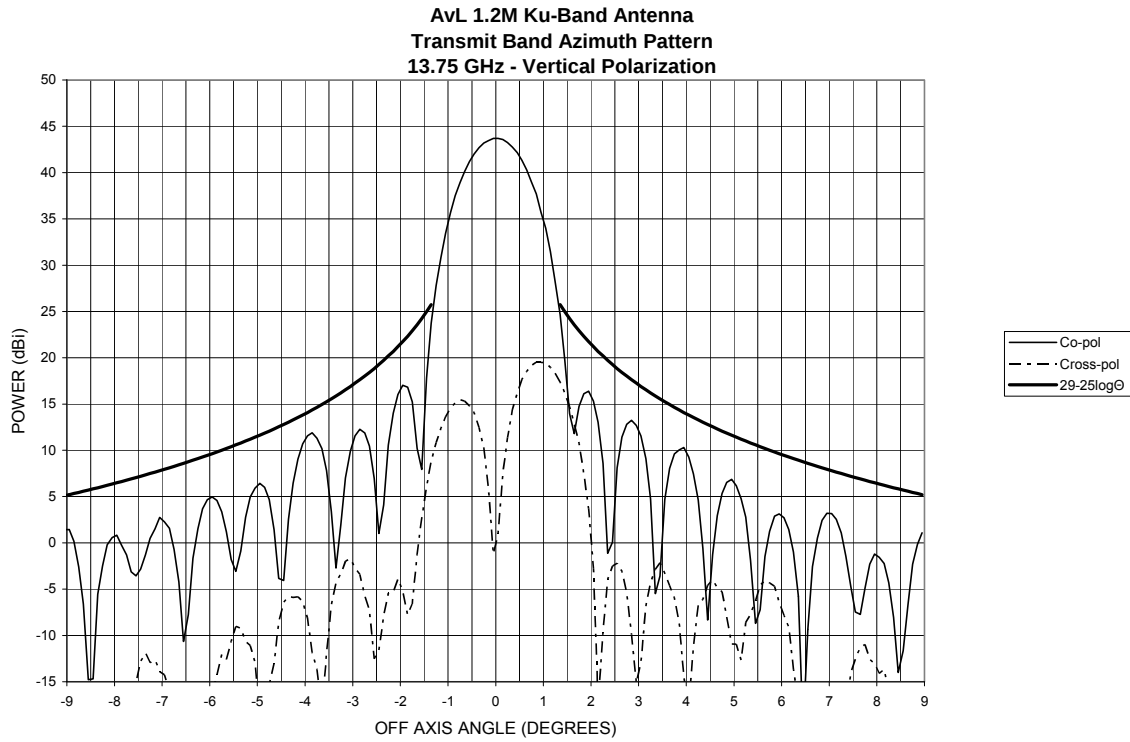
The antenna's overall height above ground level is less than 2 meters.

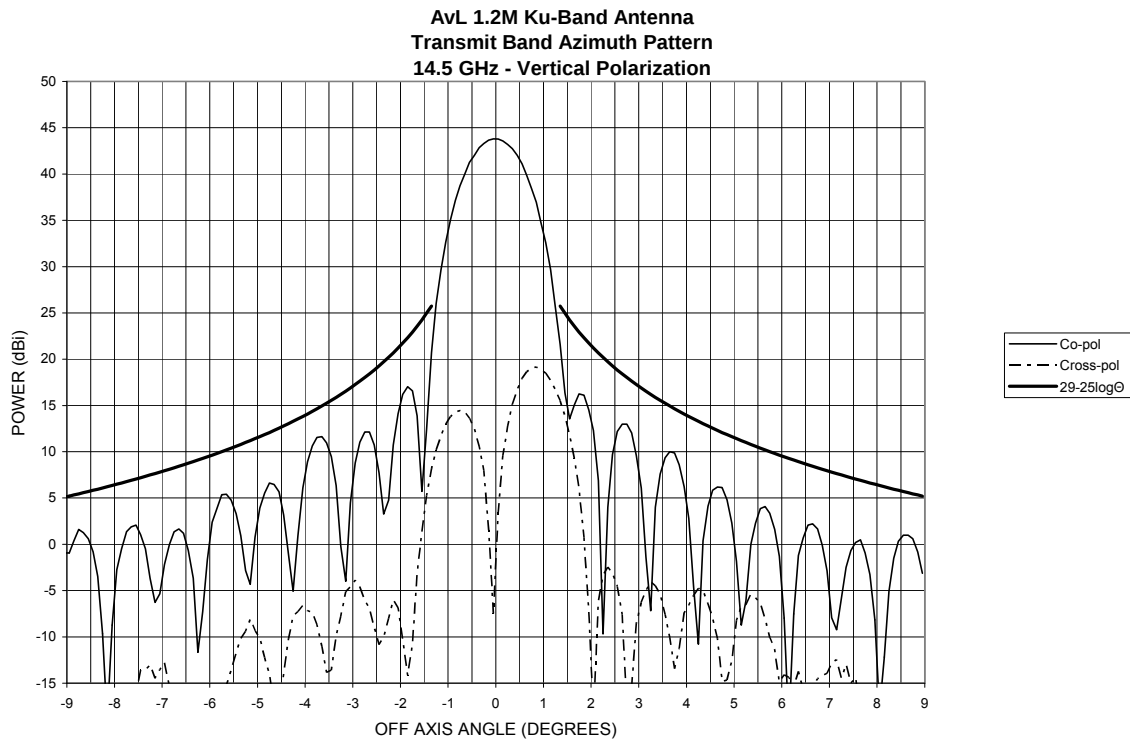
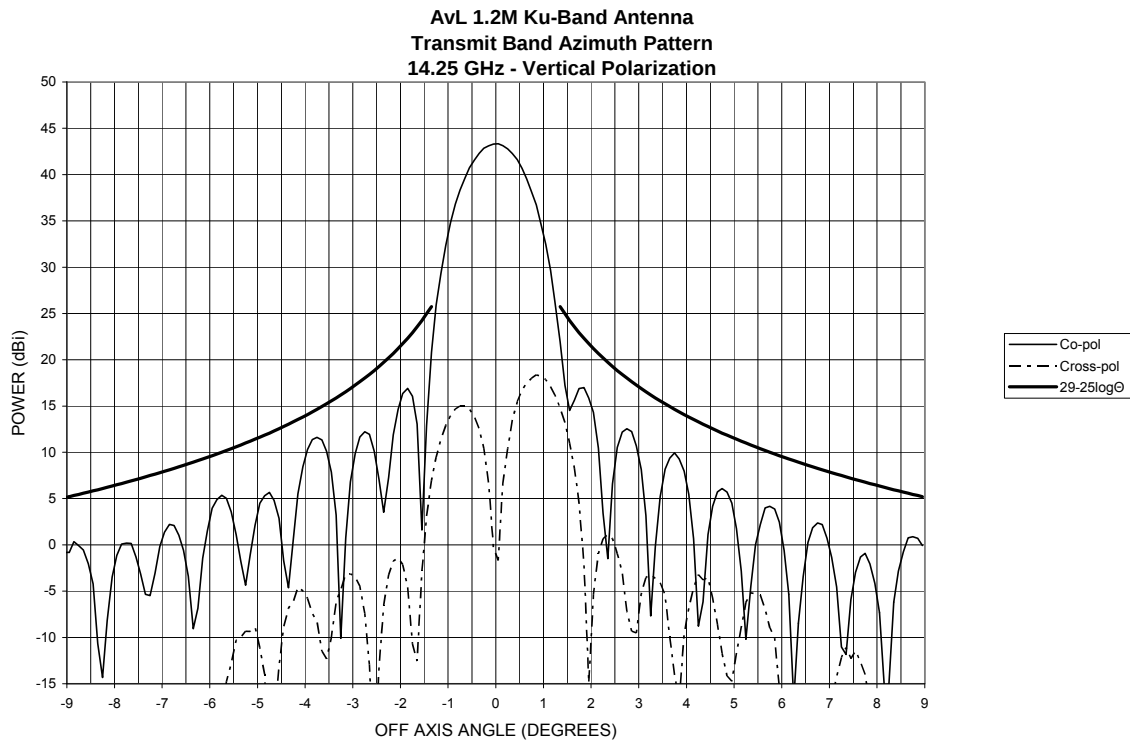
(10) Directional Antenna Characteristics

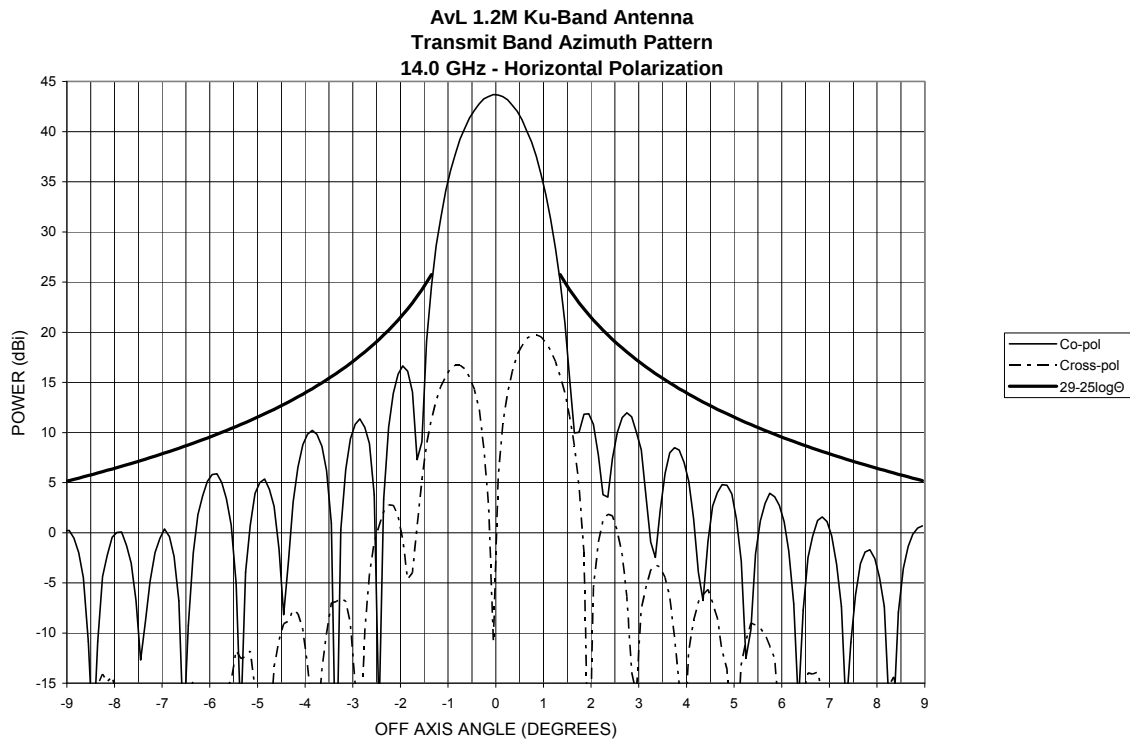
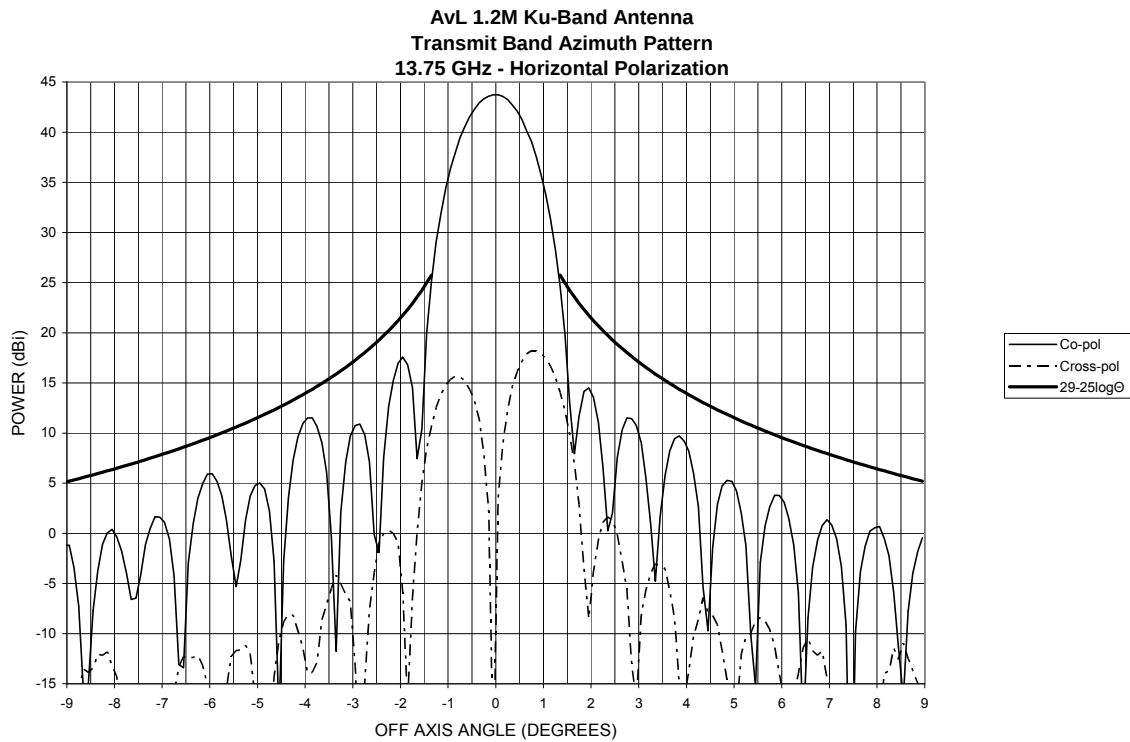
Sterling, VA Location	
Width of the antenna beam in degrees at the half-power point	1.3°
Orientation of the antenna in the horizontal plane	240.1° (True)
Orientation of the antenna in the vertical plane	23.7°

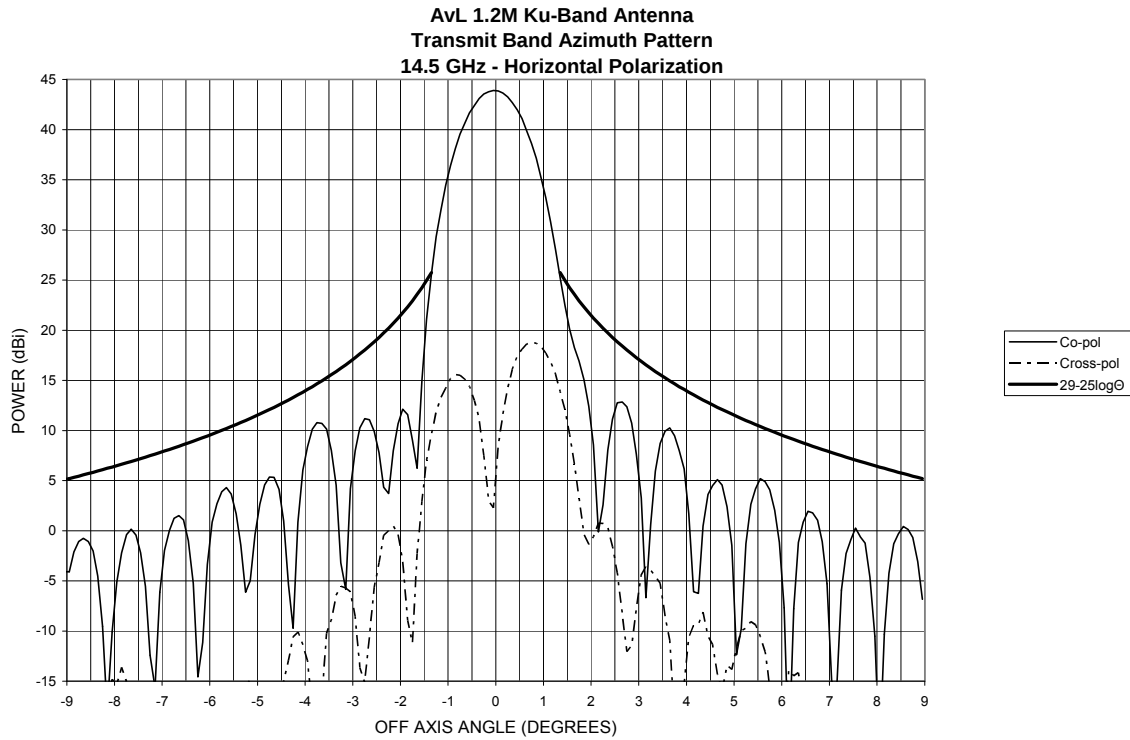
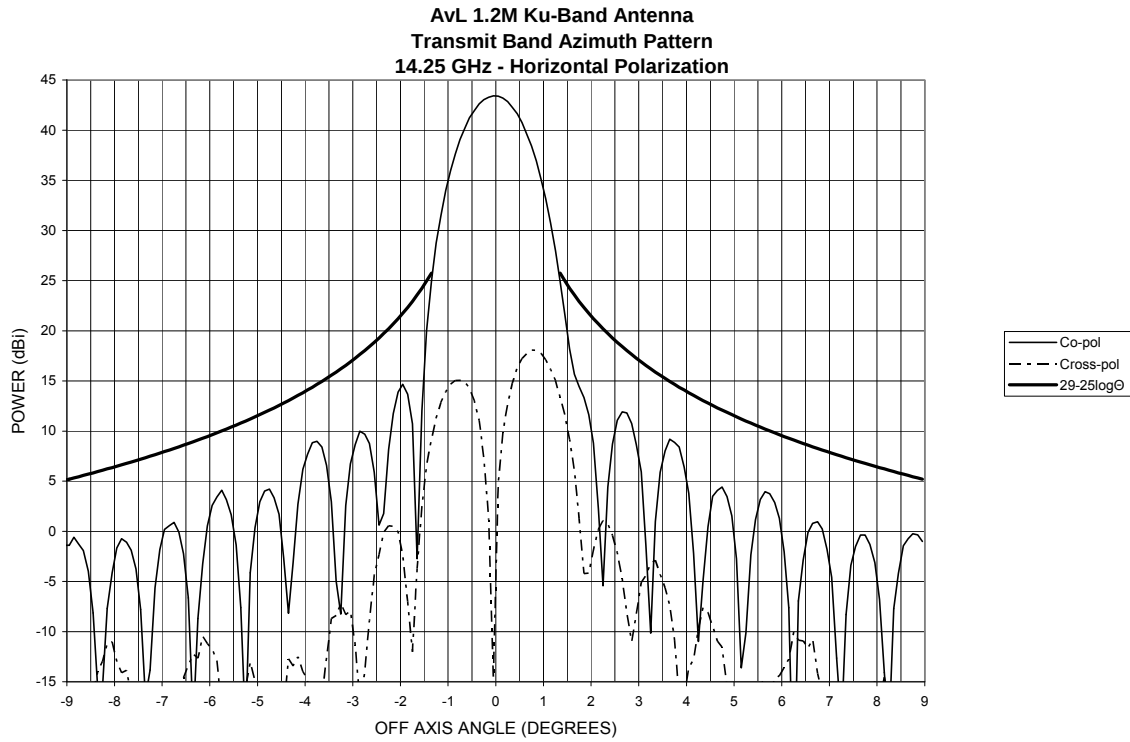
Manassas, VA Location	
Width of the antenna beam in degrees at the half-power point	1.3°
Orientation of the antenna in the horizontal plane	240.1° (True)
Orientation of the antenna in the vertical plane	23.9°

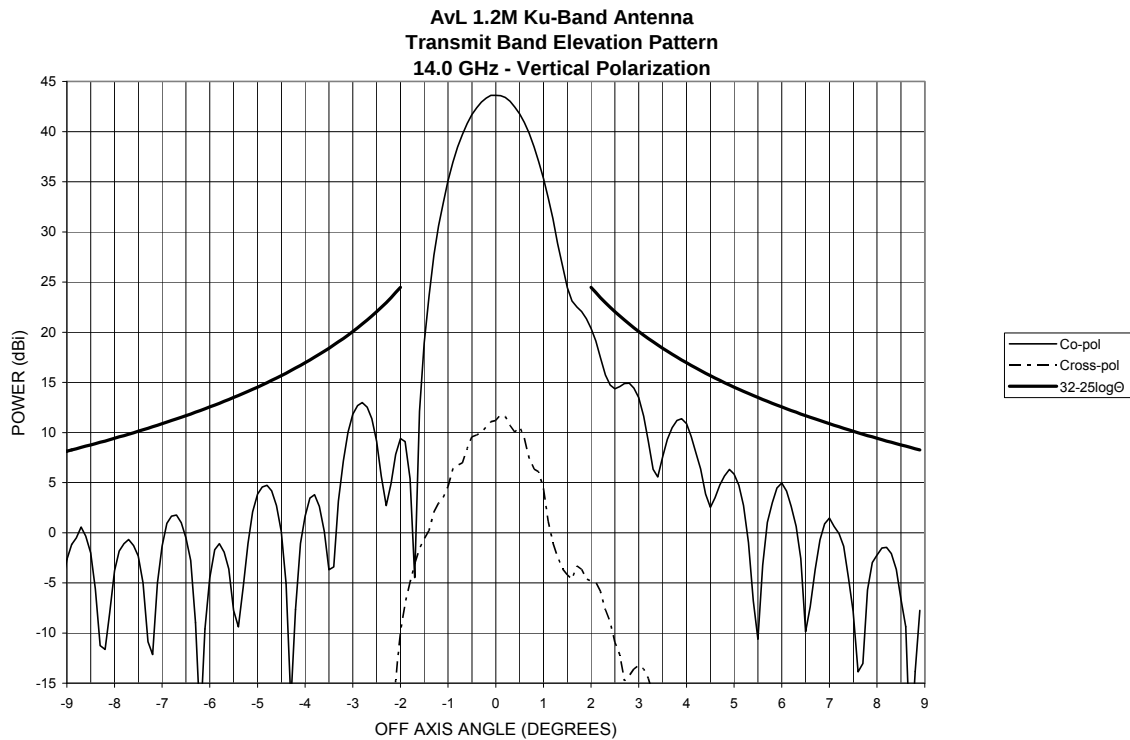
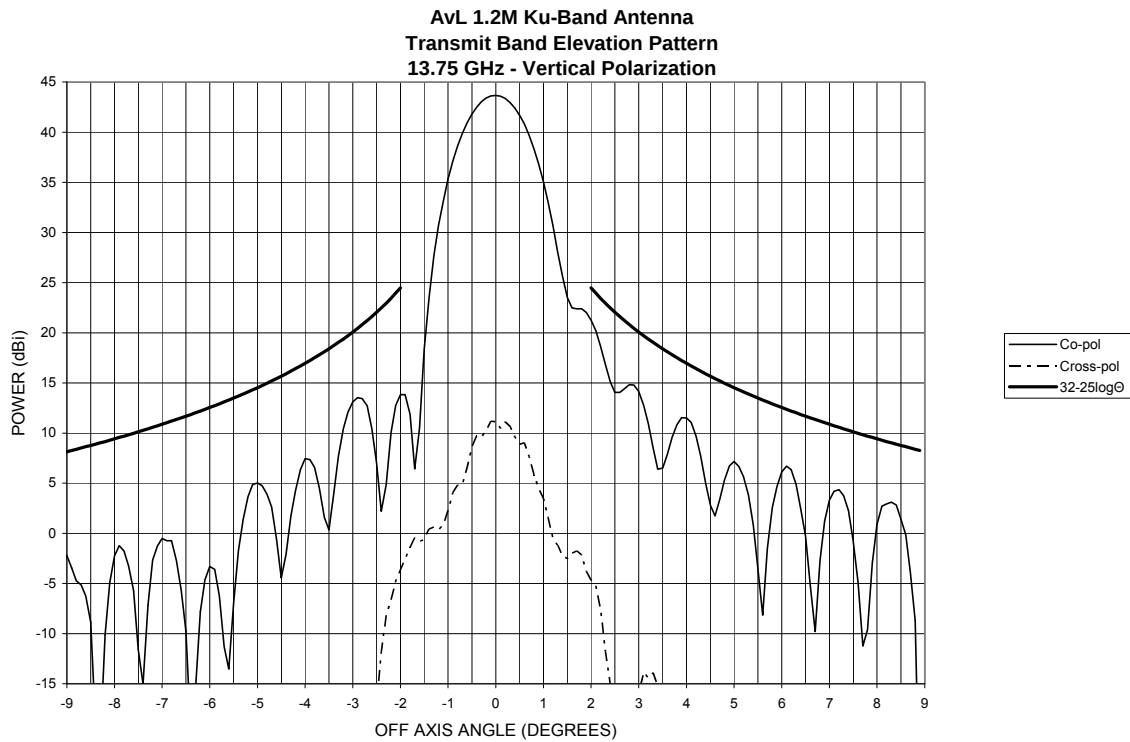
Antenna patterns are provided in Annex 1.

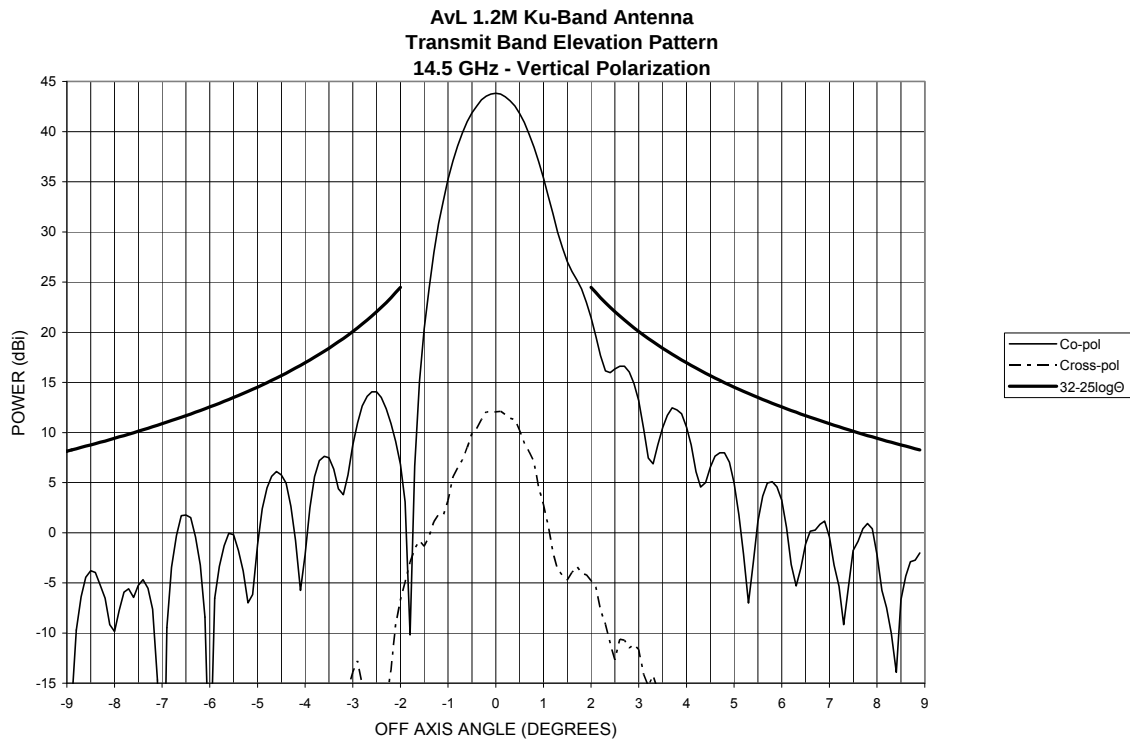
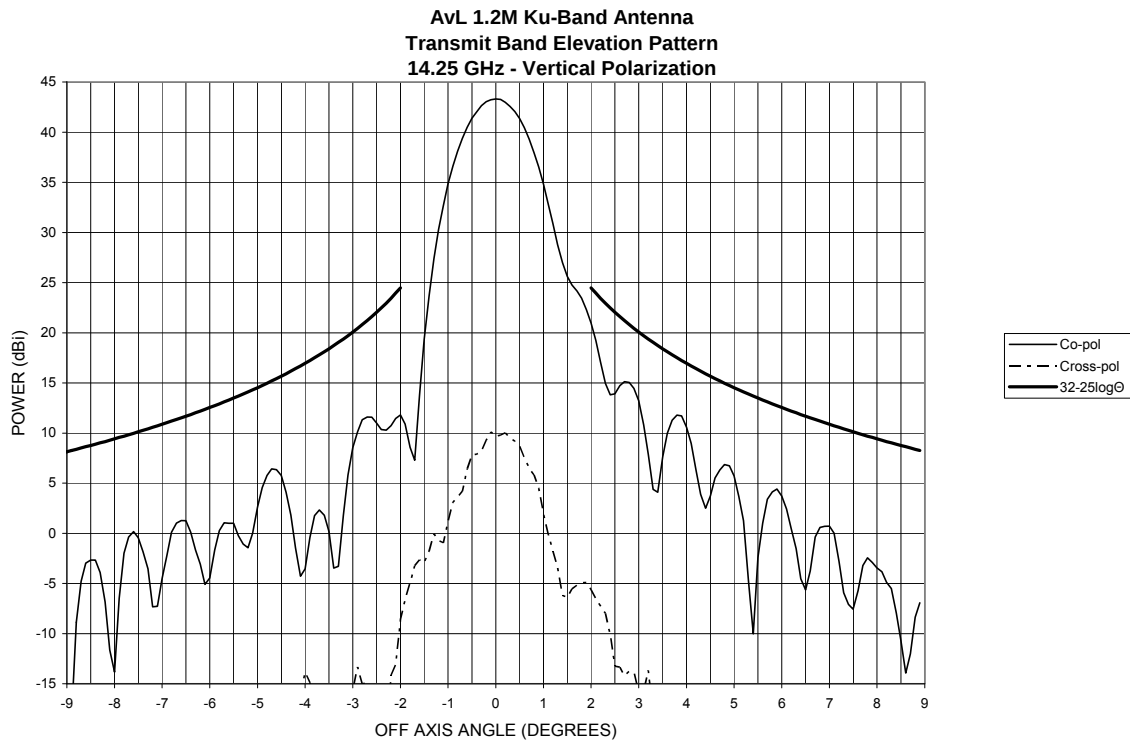


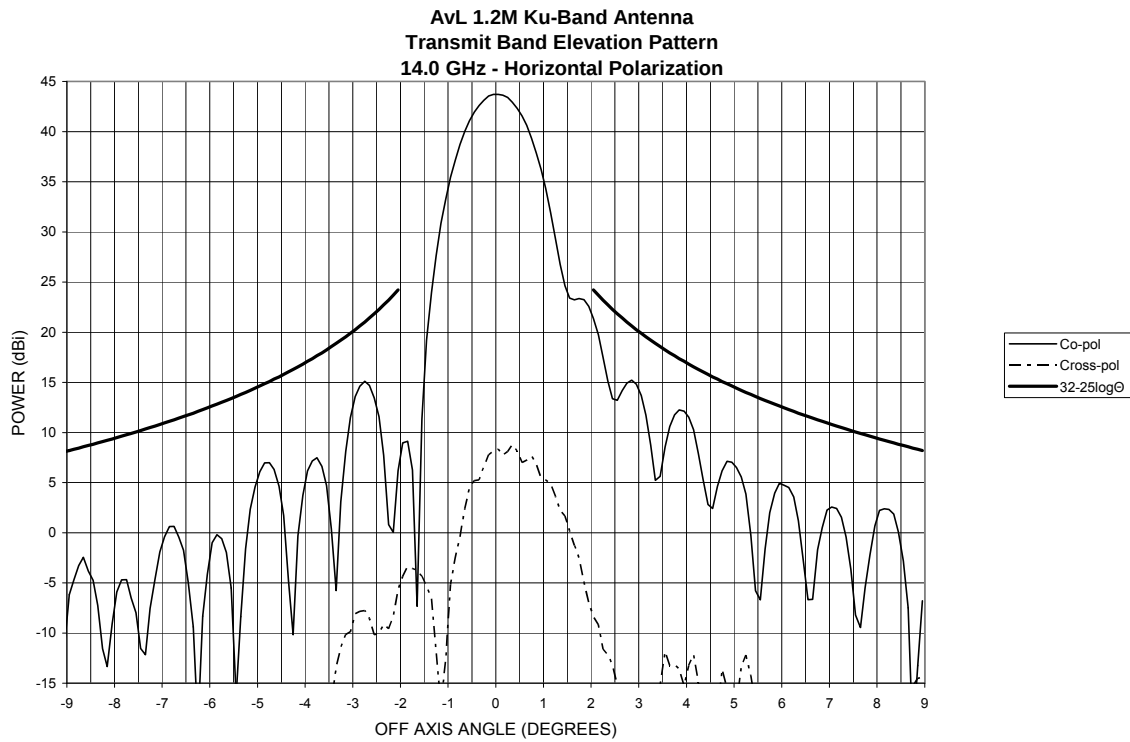
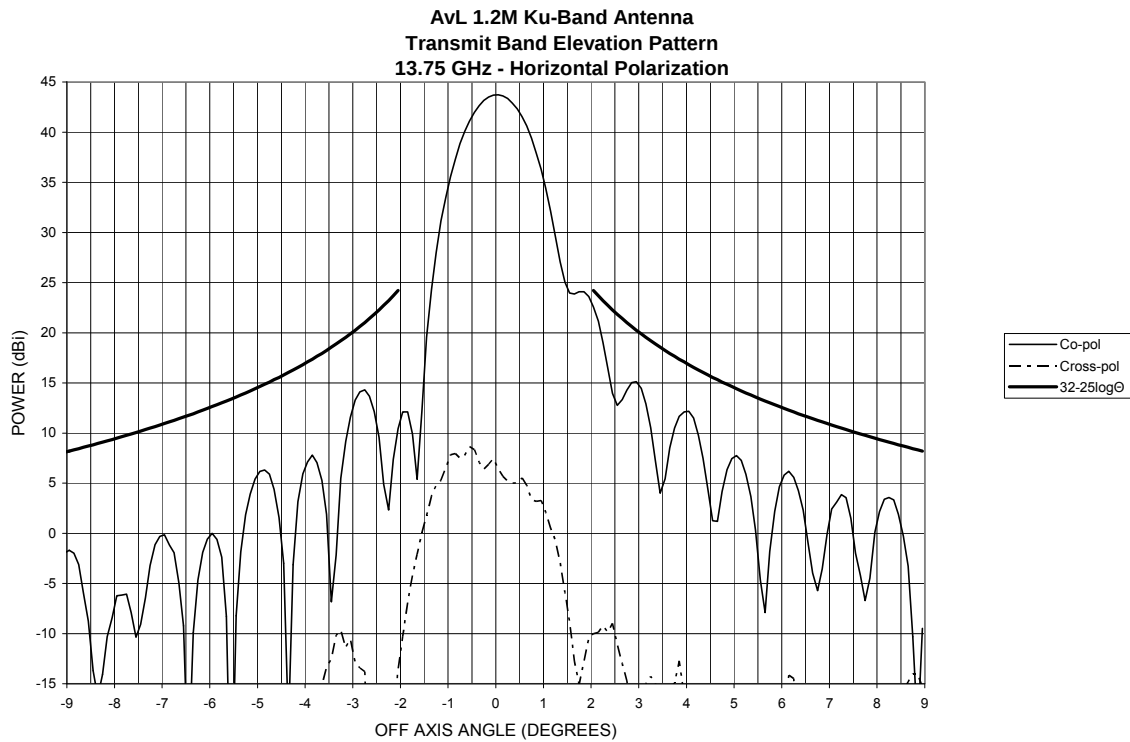


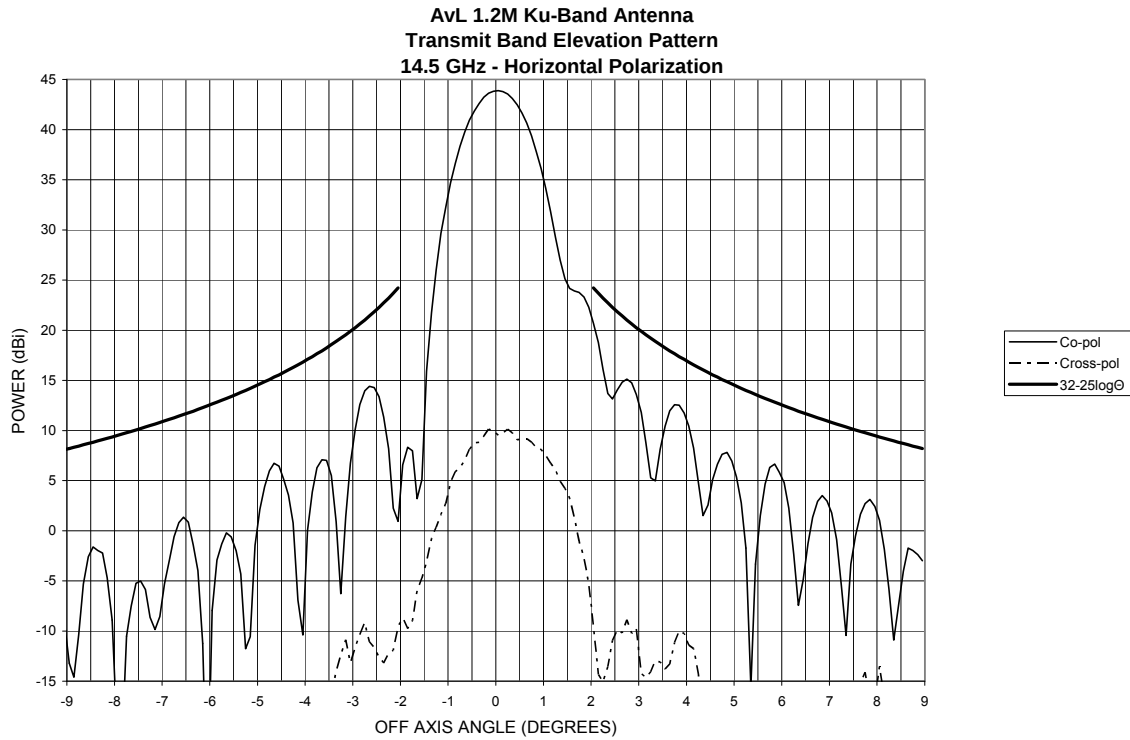
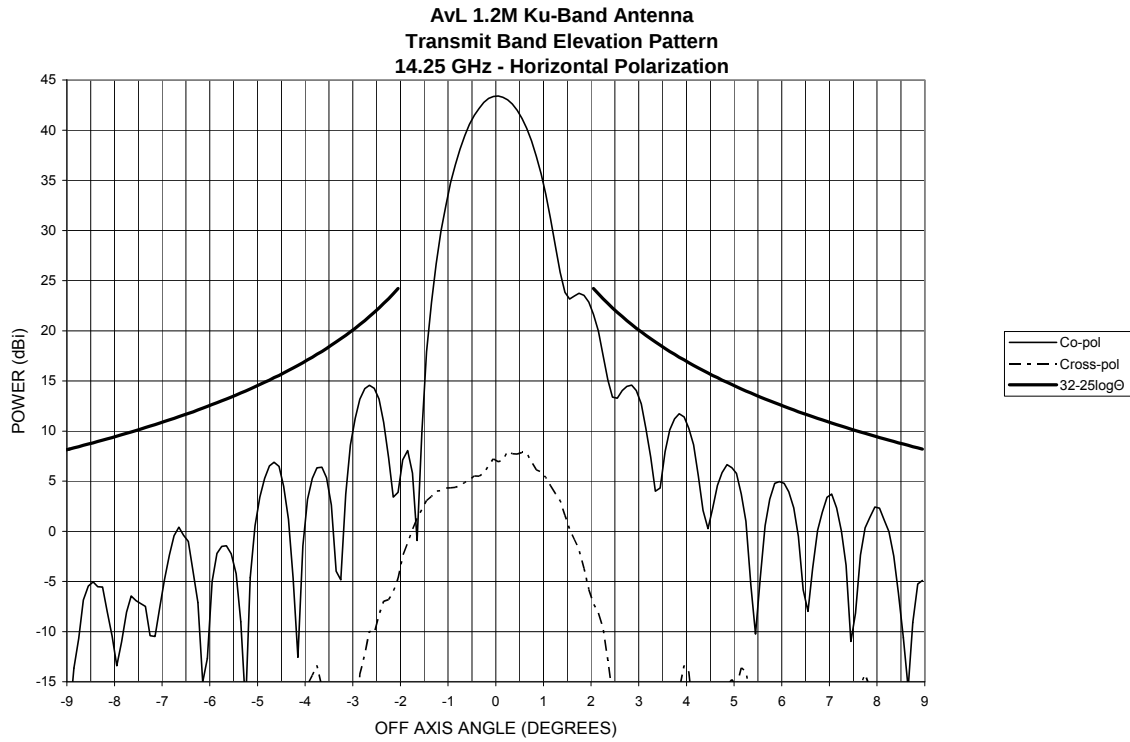




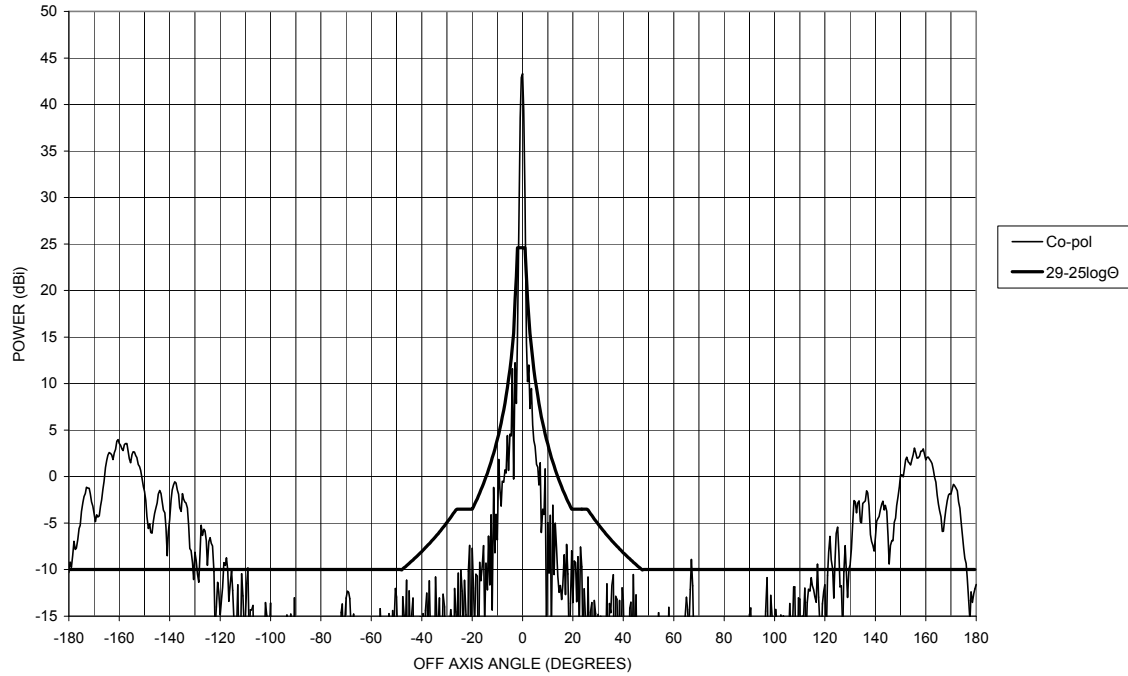




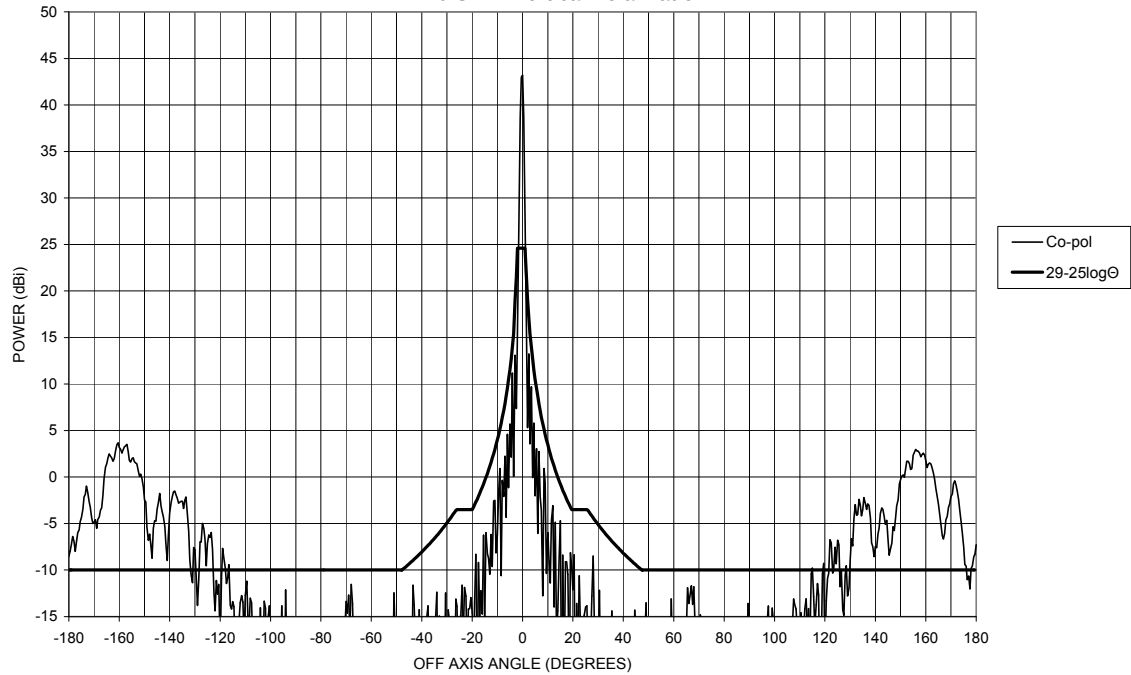




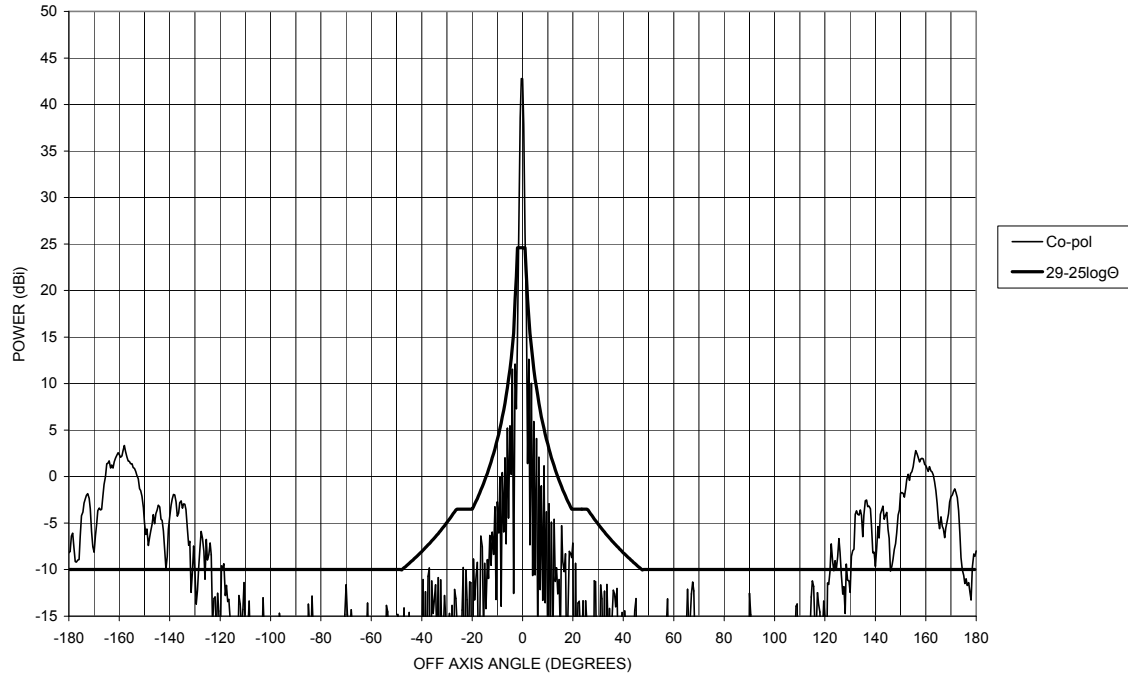
**AvL 1.2M Ku-Band Antenna
Transmit Band Azimuth Pattern
13.75 GHz - Vertical Polarization**



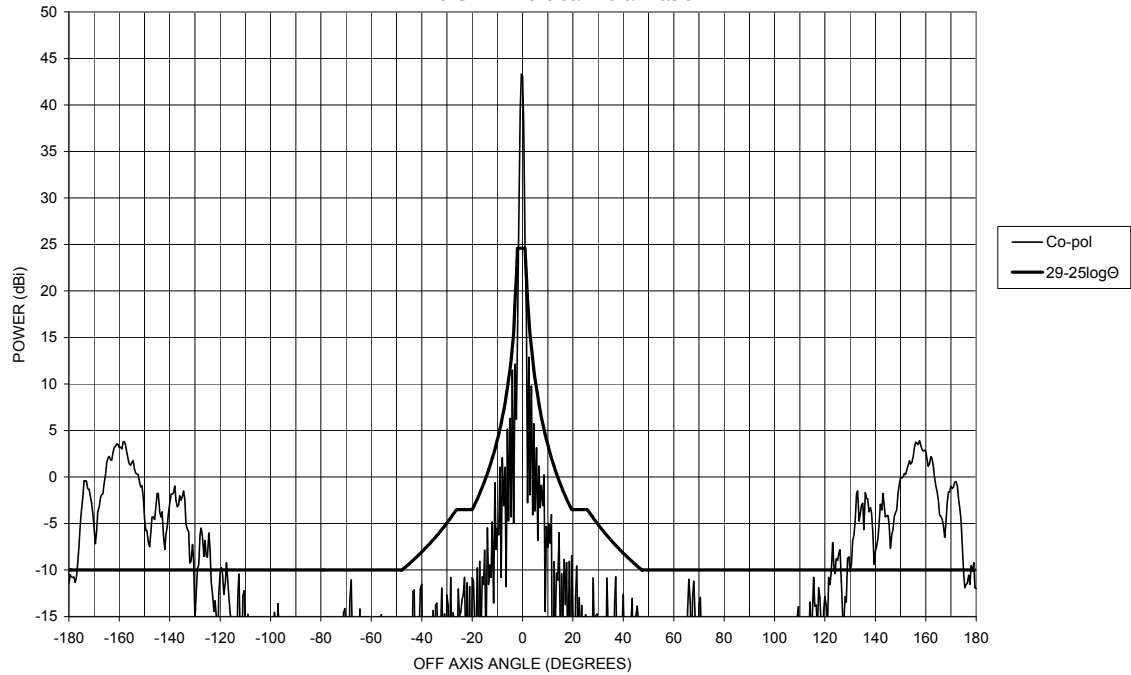
**AvL 1.2M Ku-Band Antenna
Transmit Band Azimuth Pattern
14.0 GHz - Vertical Polarization**



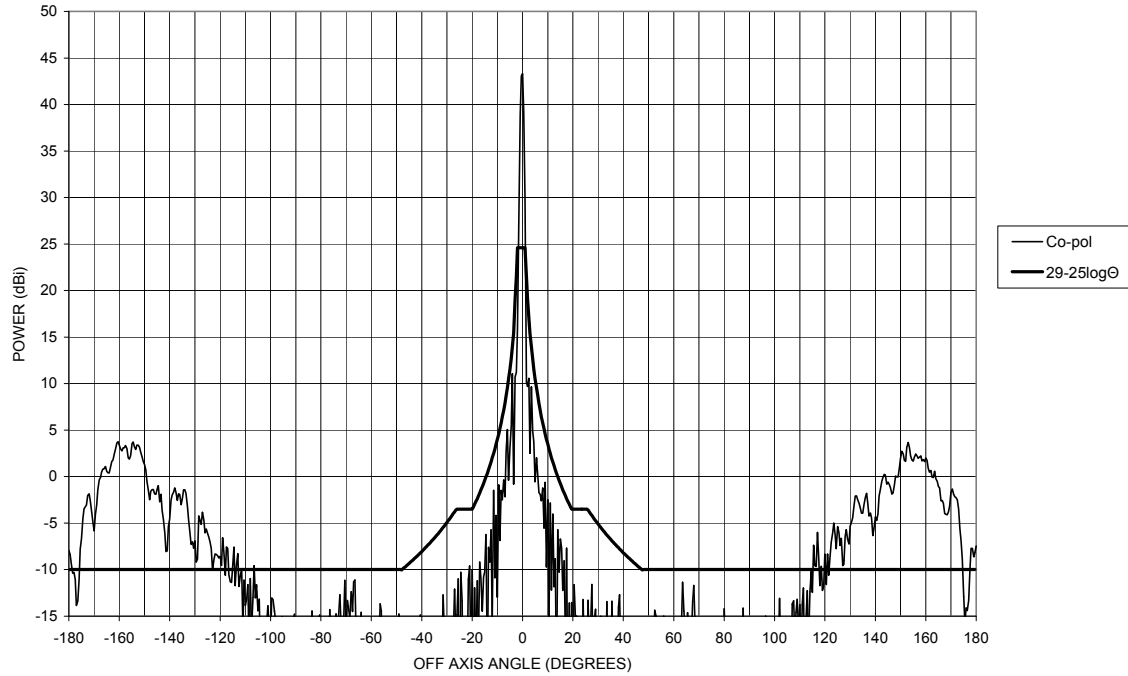
**AvL 1.2M Ku-Band Antenna
Transmit Band Azimuth Pattern
14.25 GHz - Vertical Polarization**



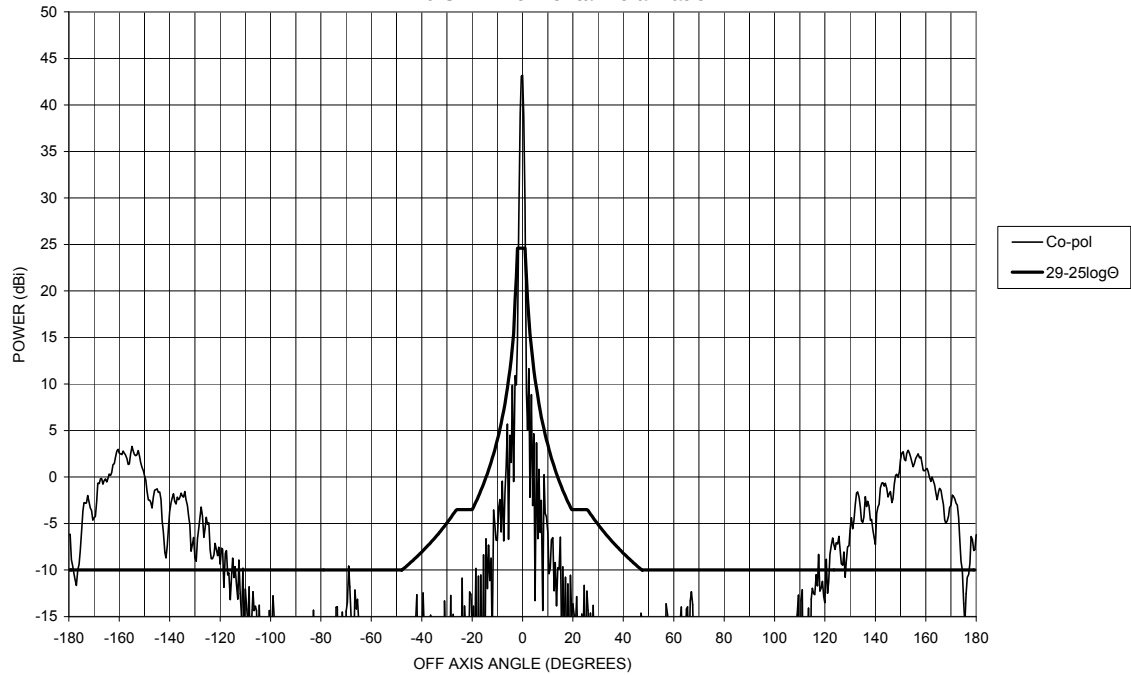
**AvL 1.2M Ku-Band Antenna
Transmit Band Azimuth Pattern
14.5 GHz - Vertical Polarization**



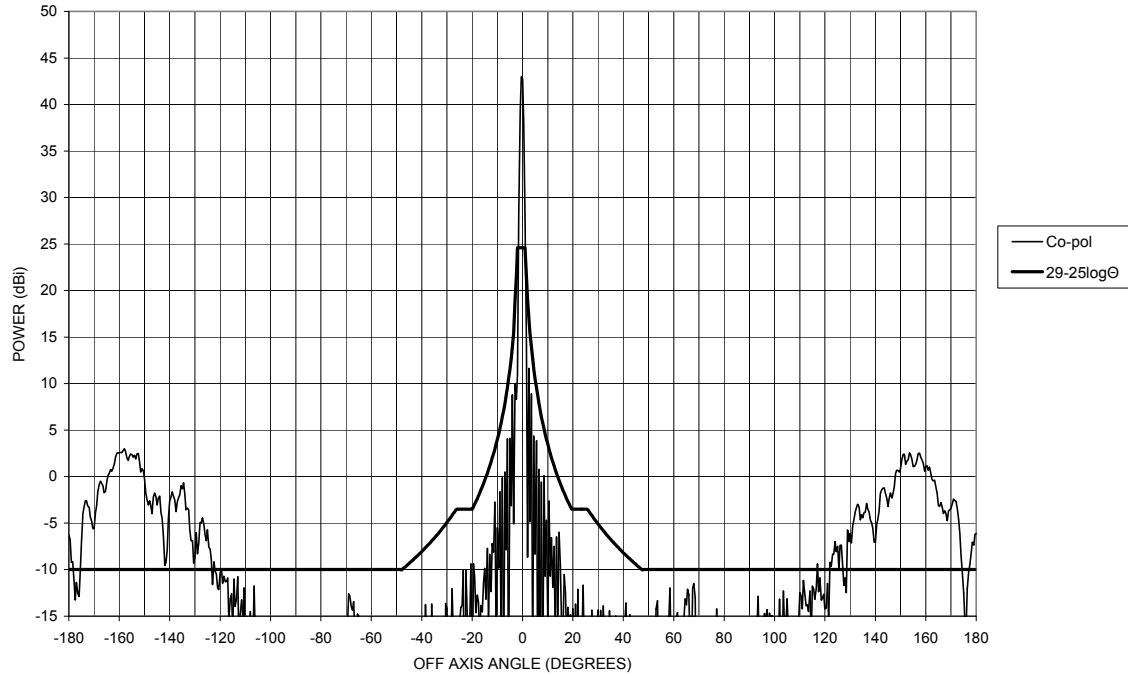
AvL 1.2M Ku-Band Antenna
Transmit Band Azimuth Pattern
13.75 GHz - Horizontal Polarization



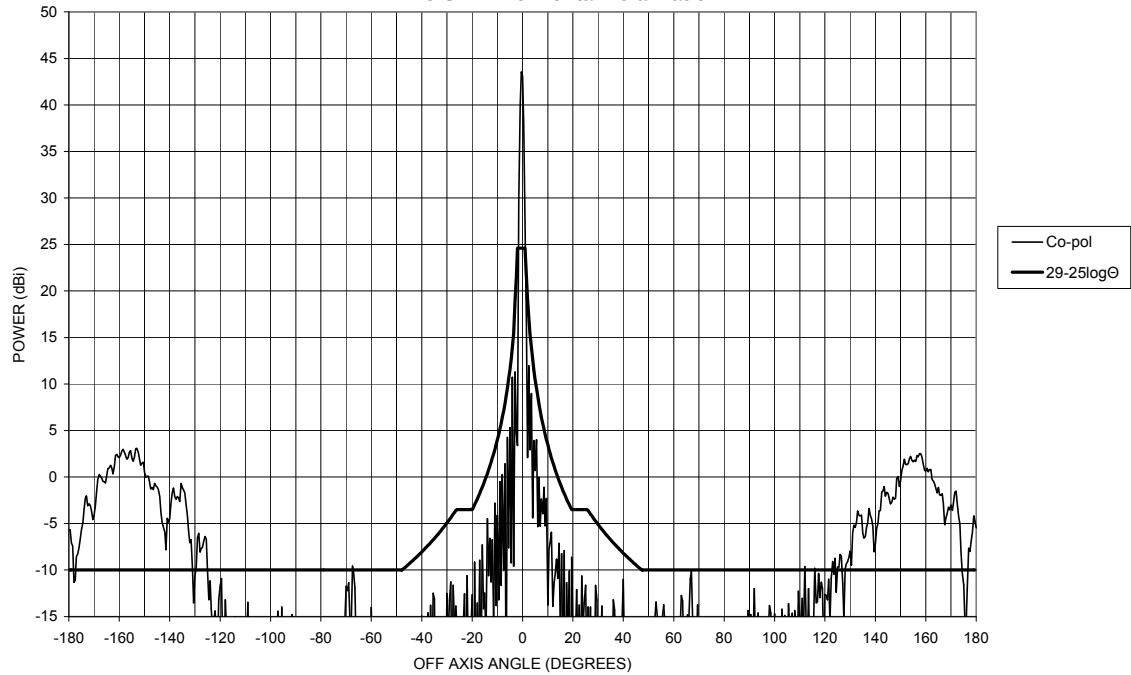
AvL 1.2M Ku-Band Antenna
Transmit Band Azimuth Pattern
14.0 GHz - Horizontal Polarization

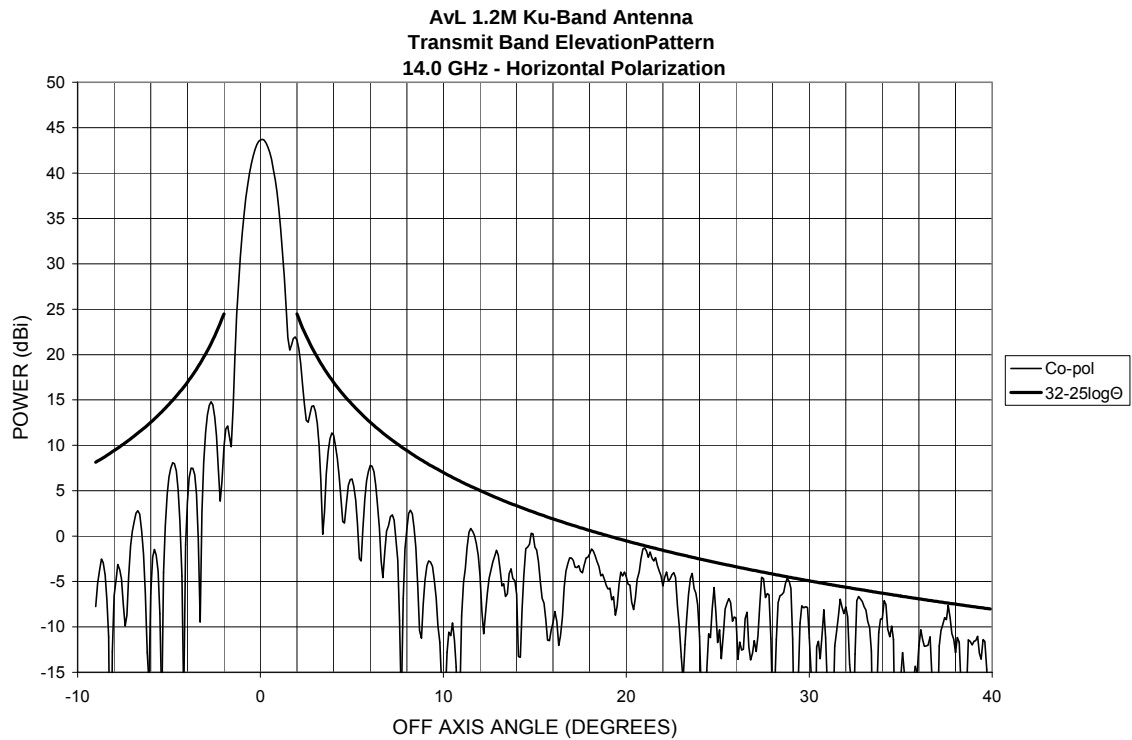
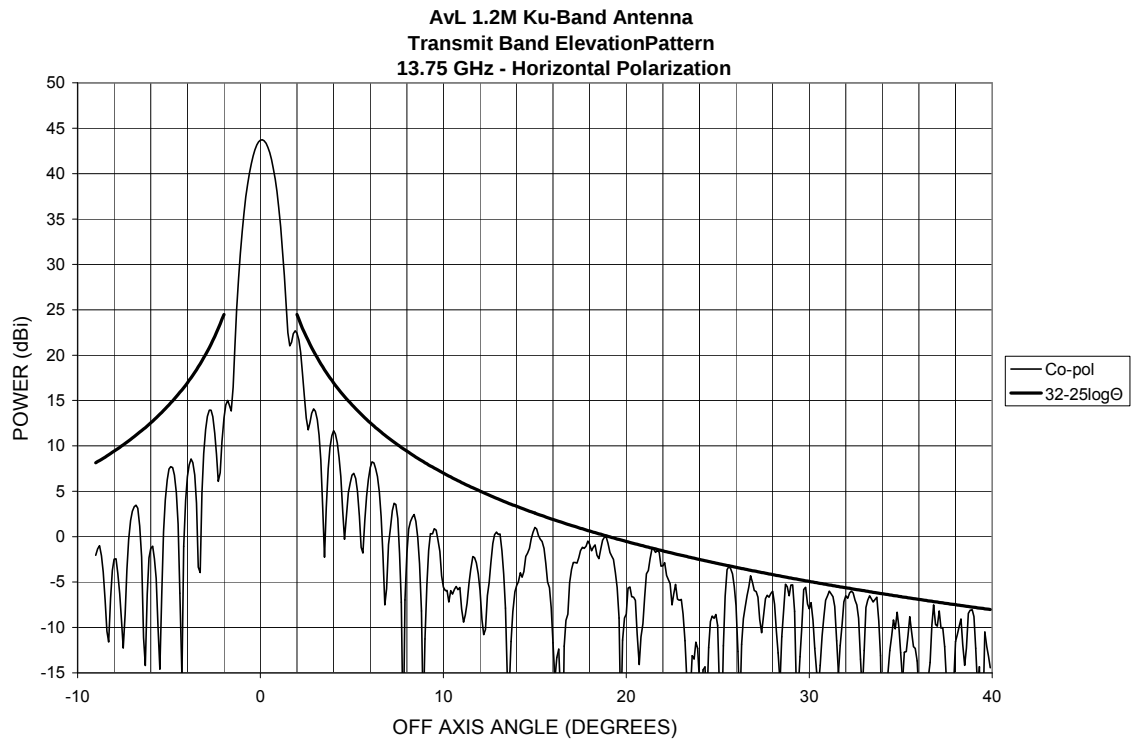


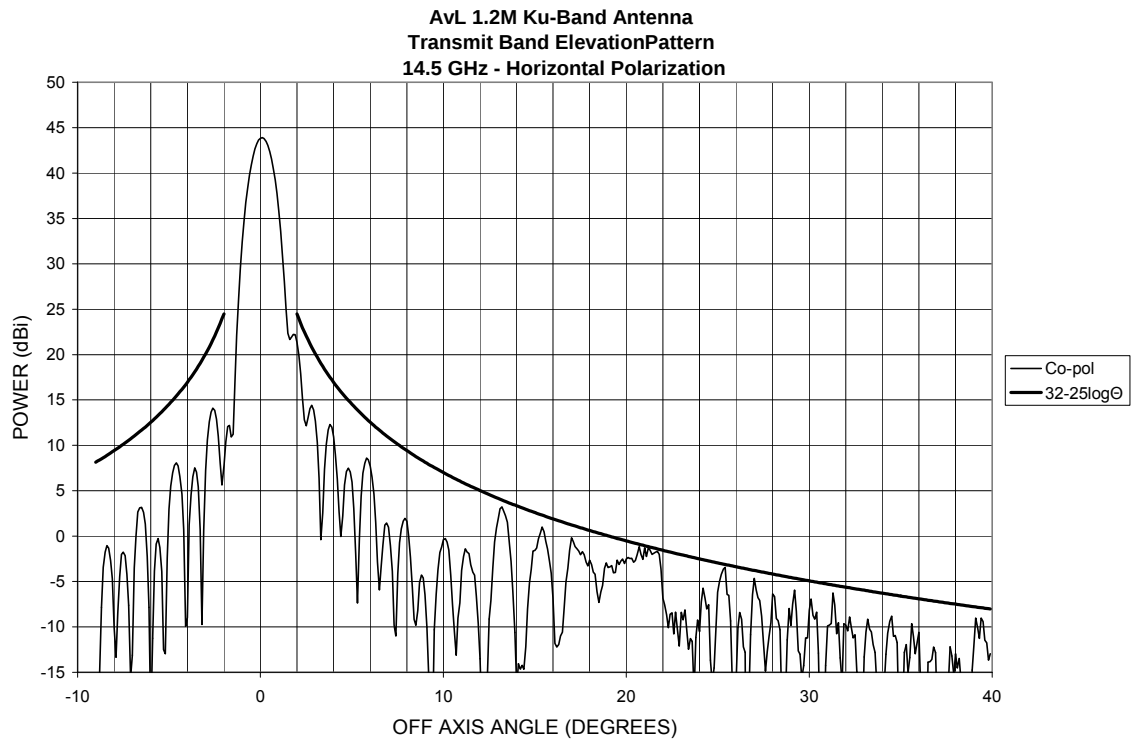
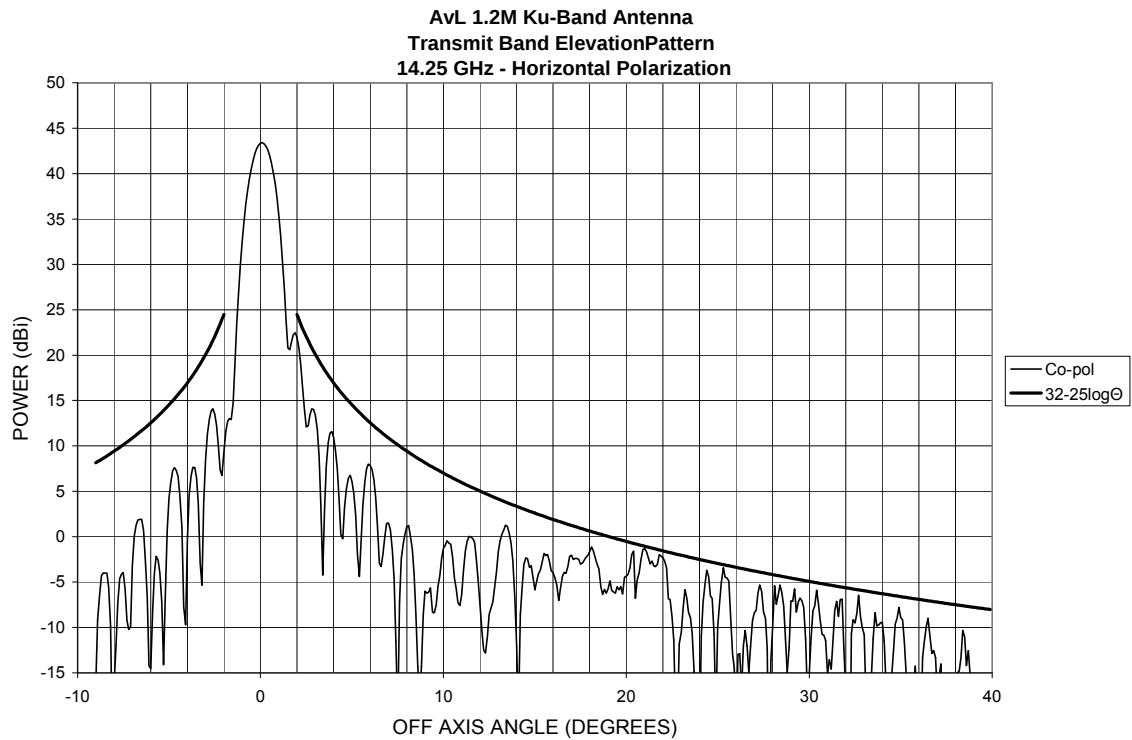
**AvL 1.2M Ku-Band Antenna
Transmit Band Azimuth Pattern
14.25 GHz - Horizontal Polarization**

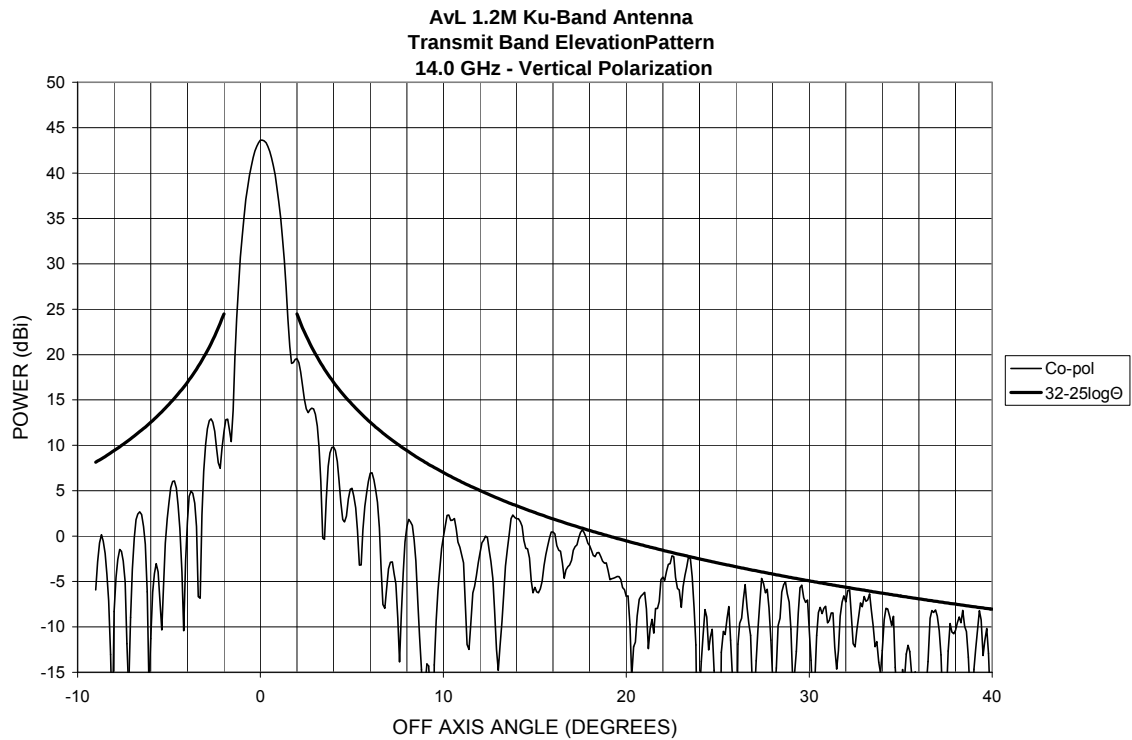
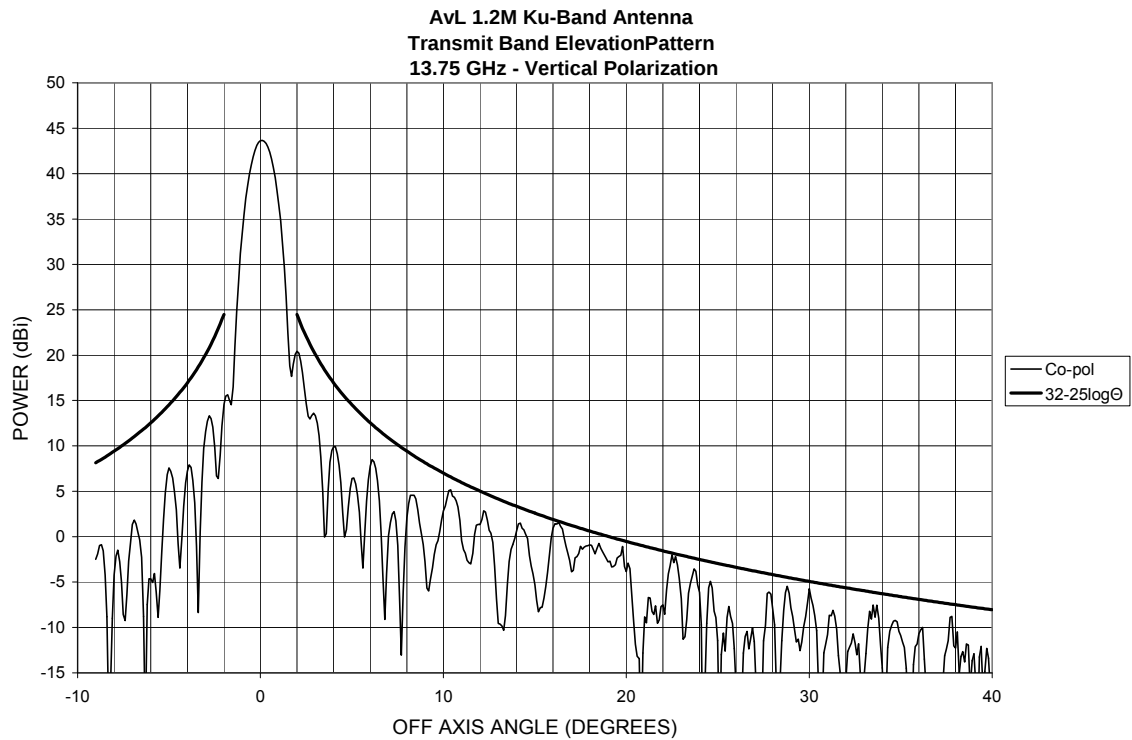


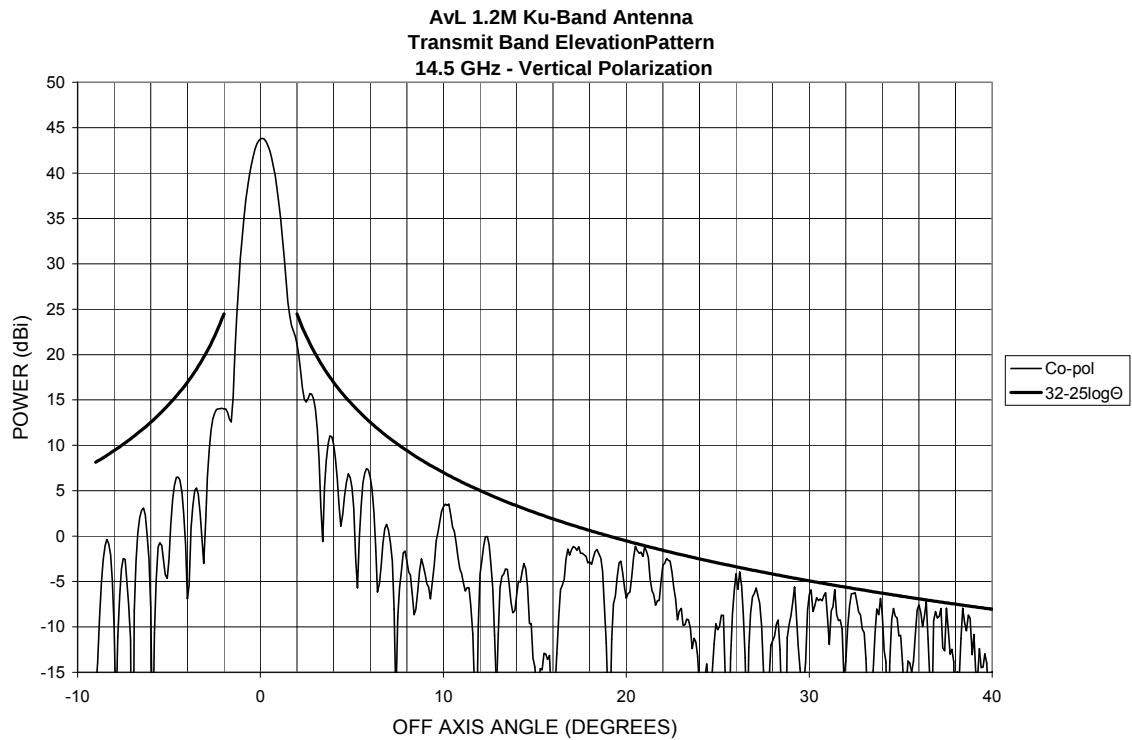
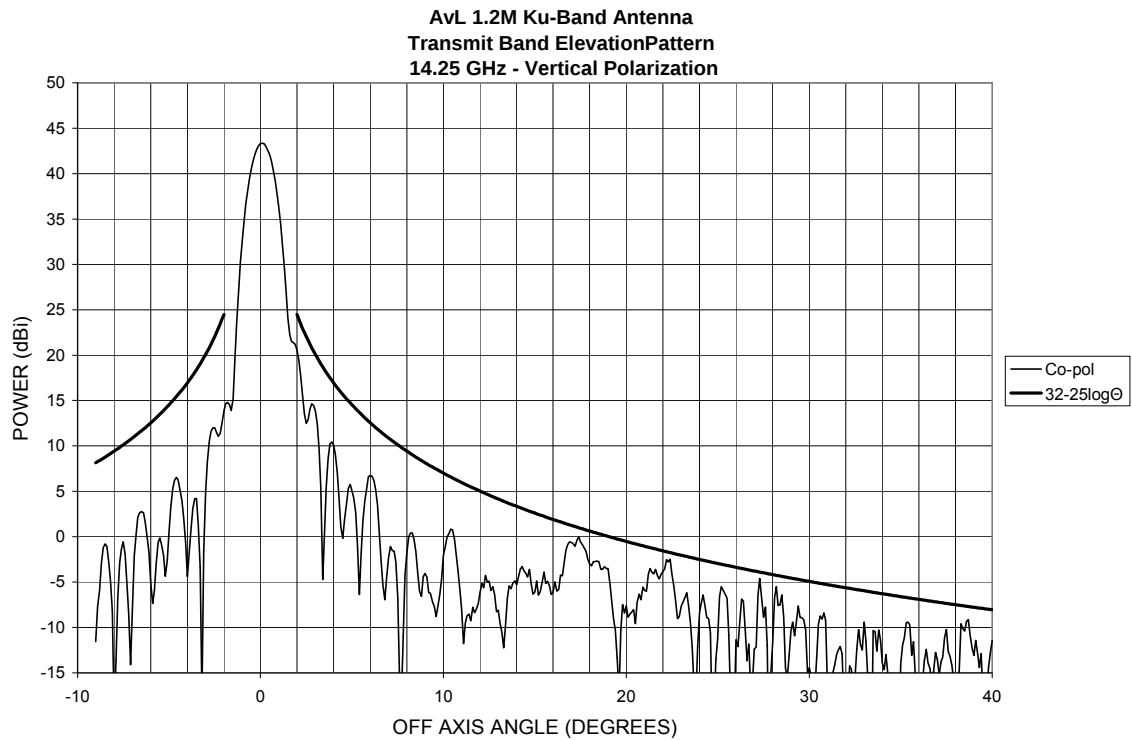
**AvL 1.2M Ku-Band Antenna
Transmit Band Azimuth Pattern
14.5 GHz - Horizontal Polarization**

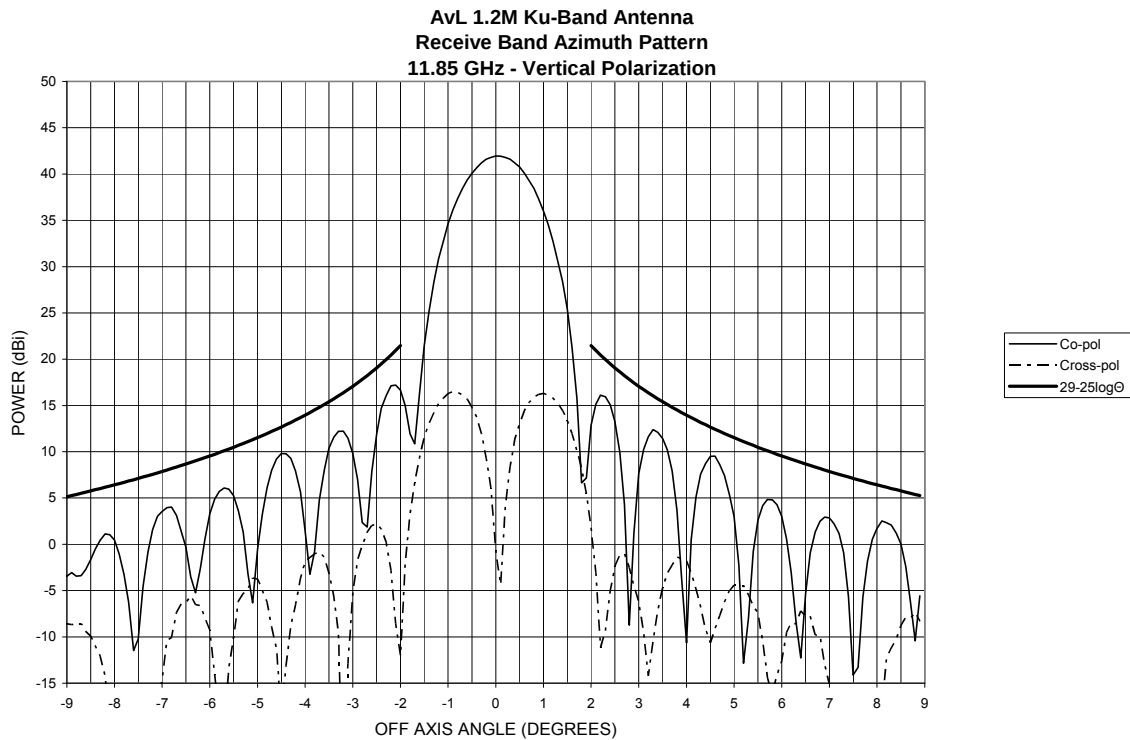
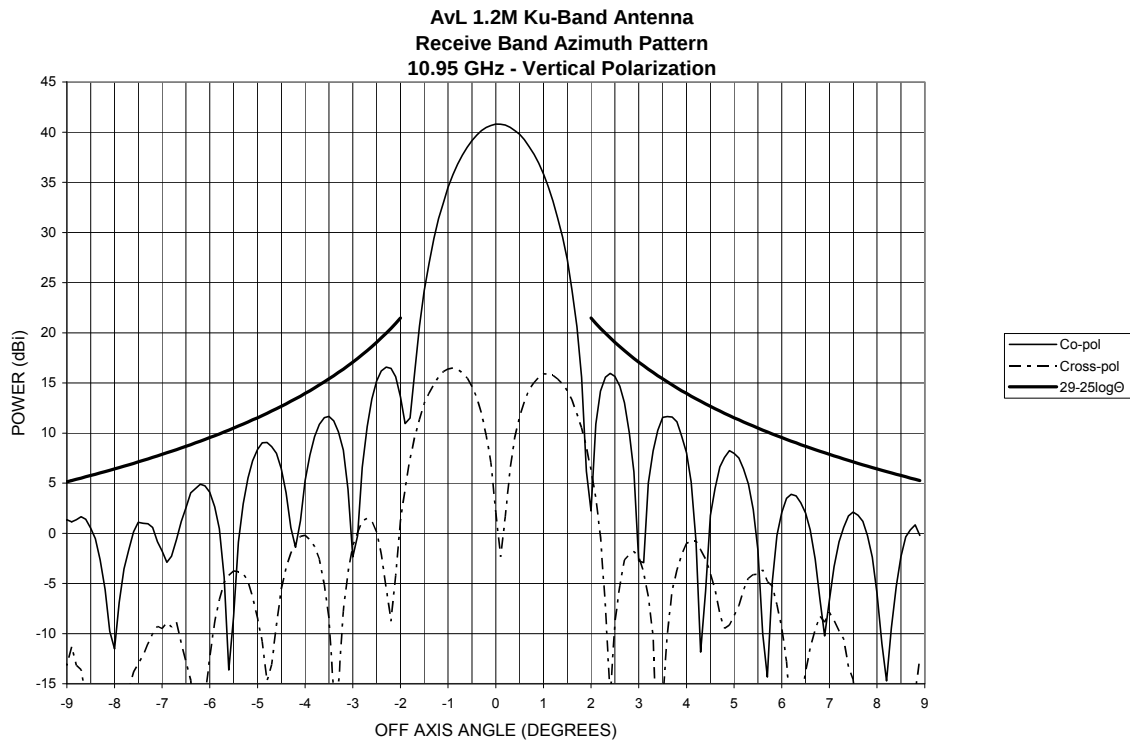


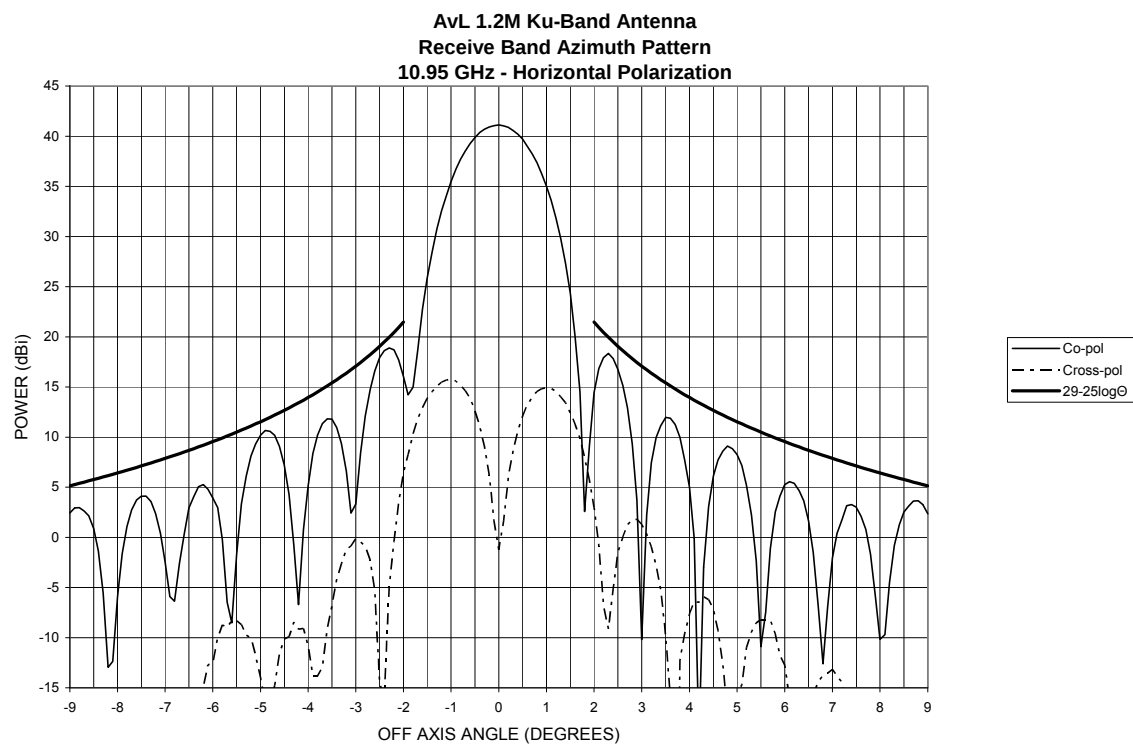
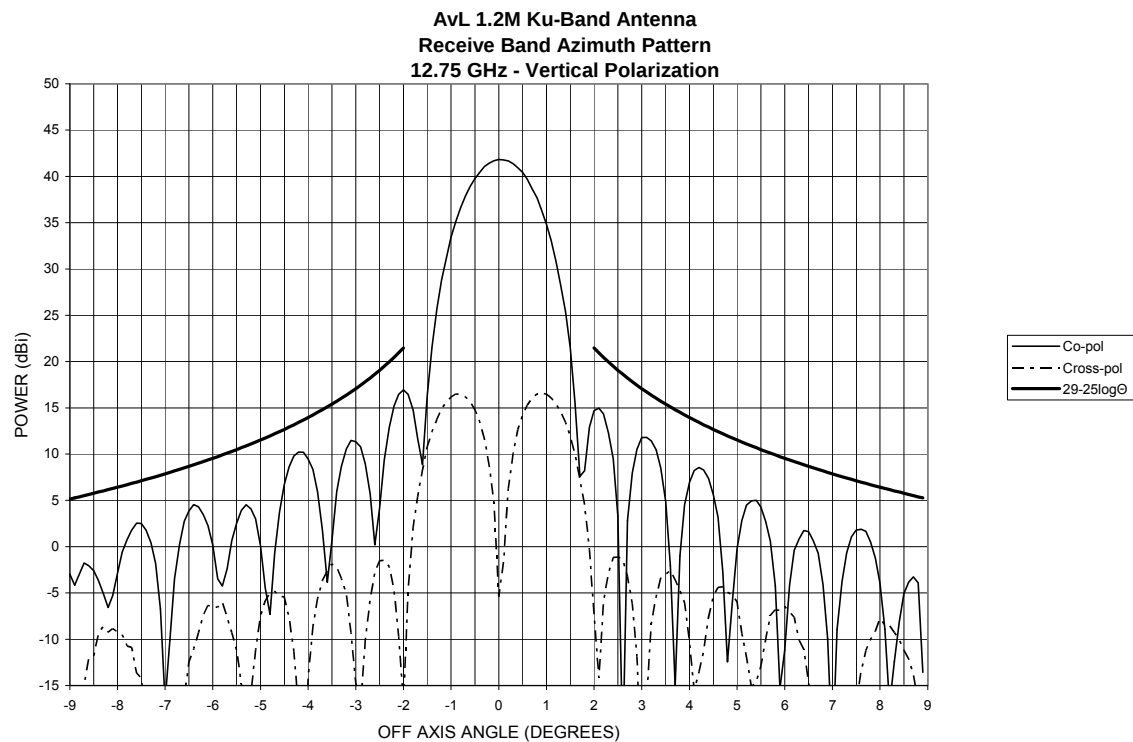


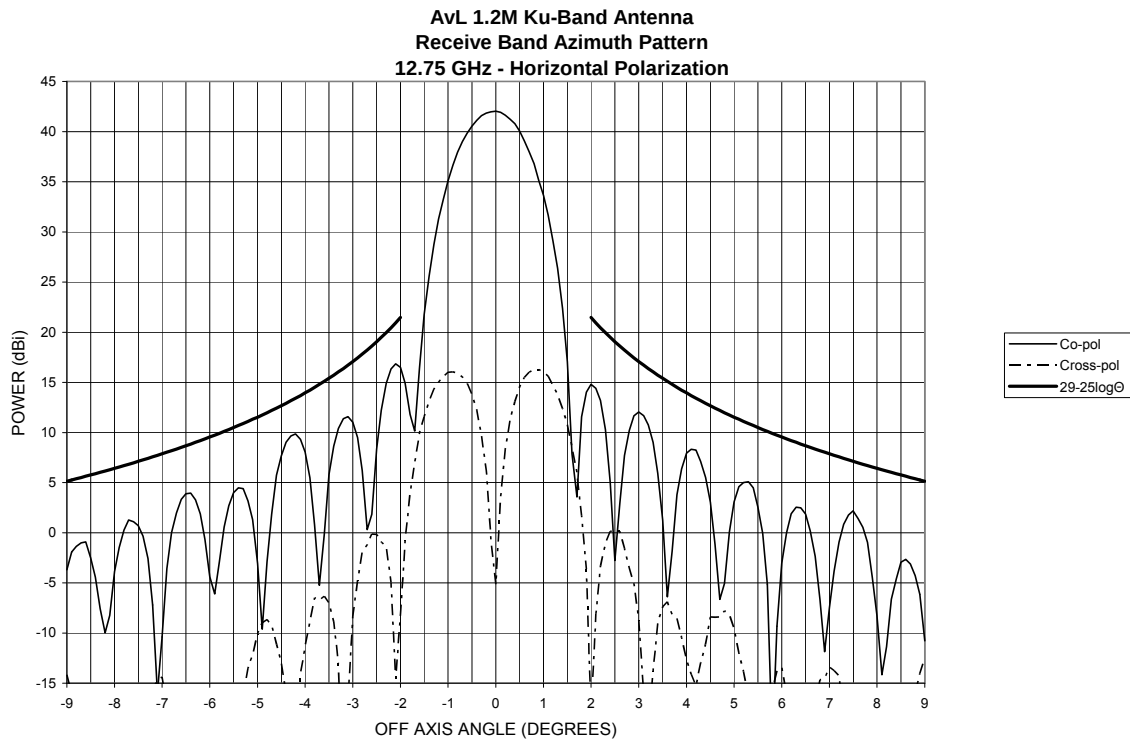
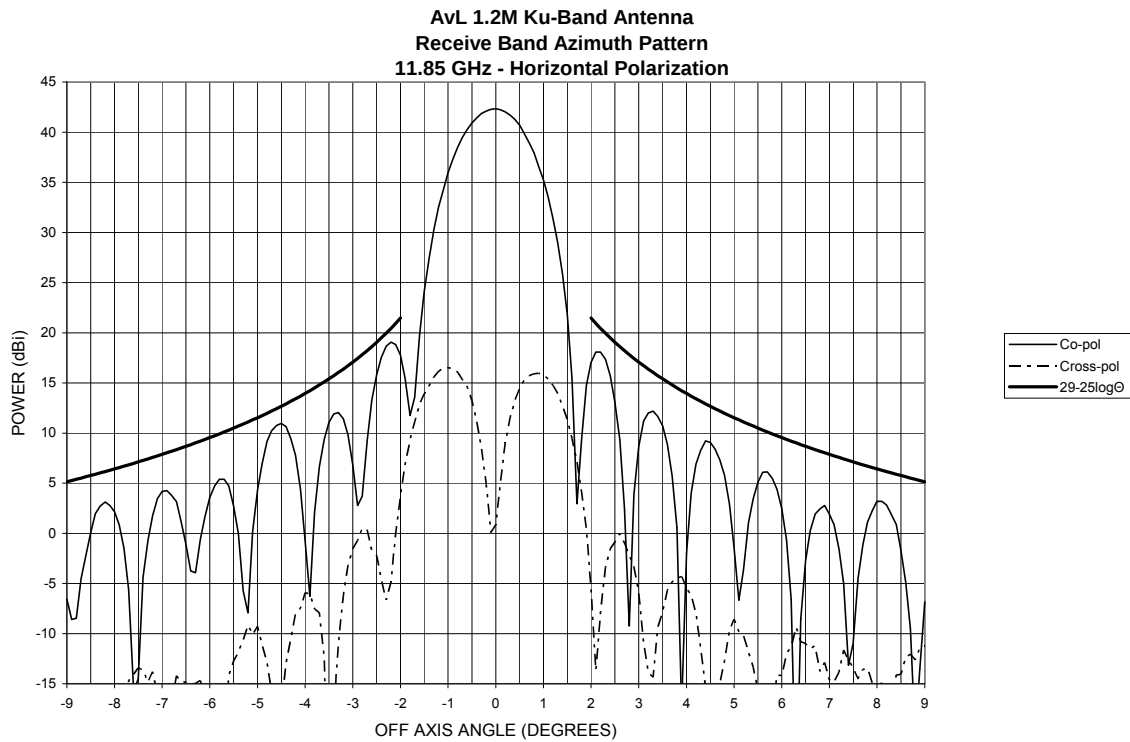


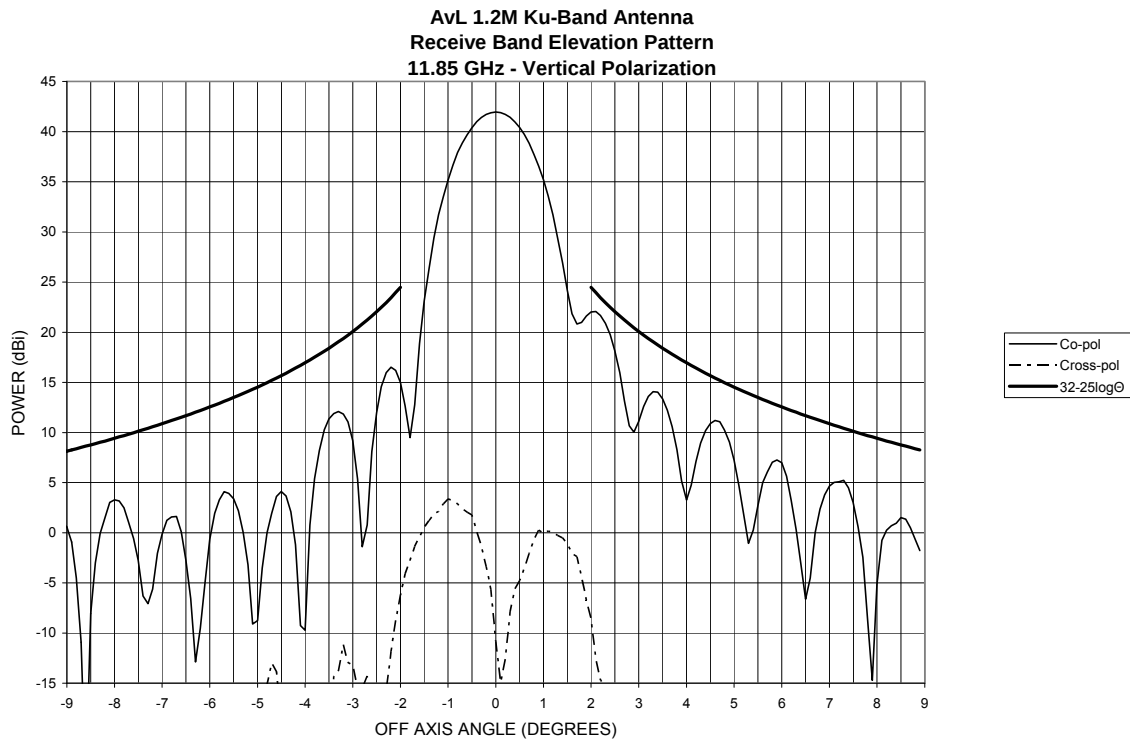
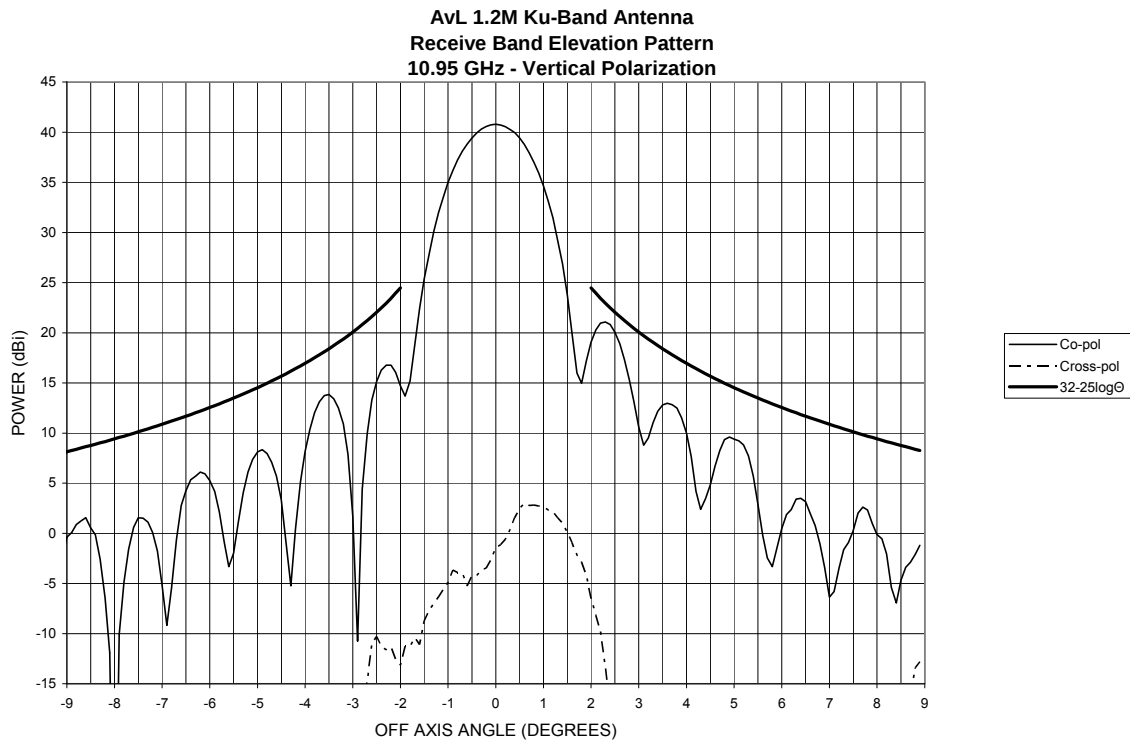


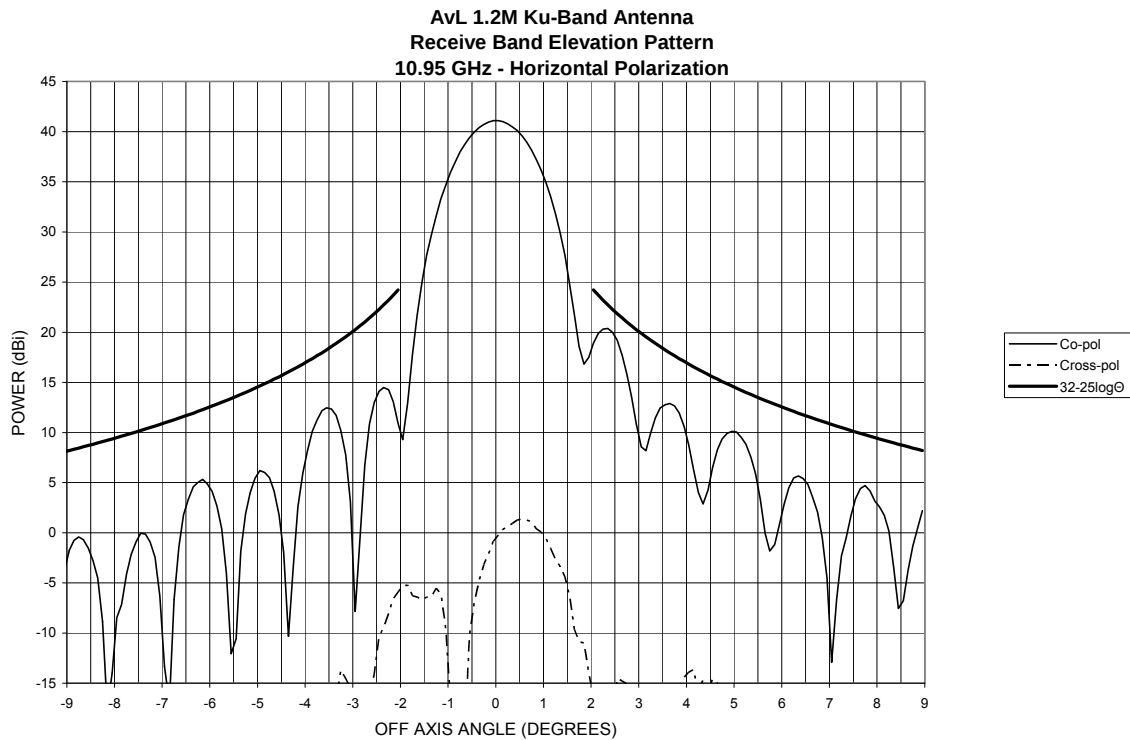
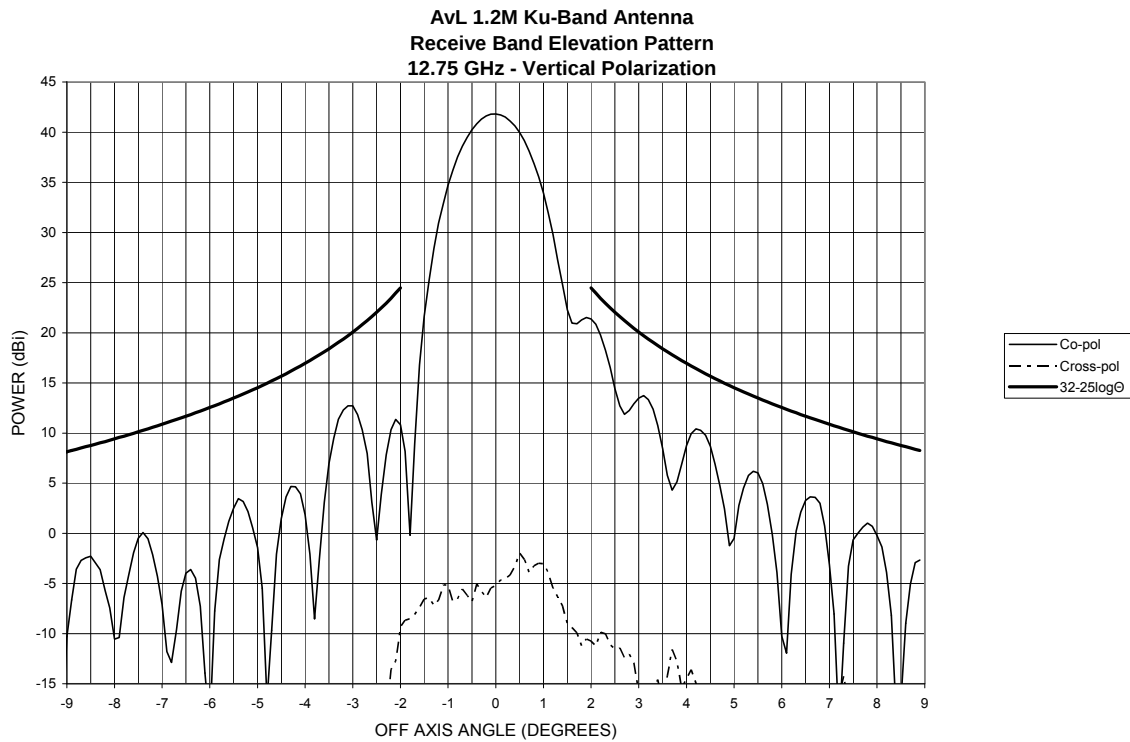


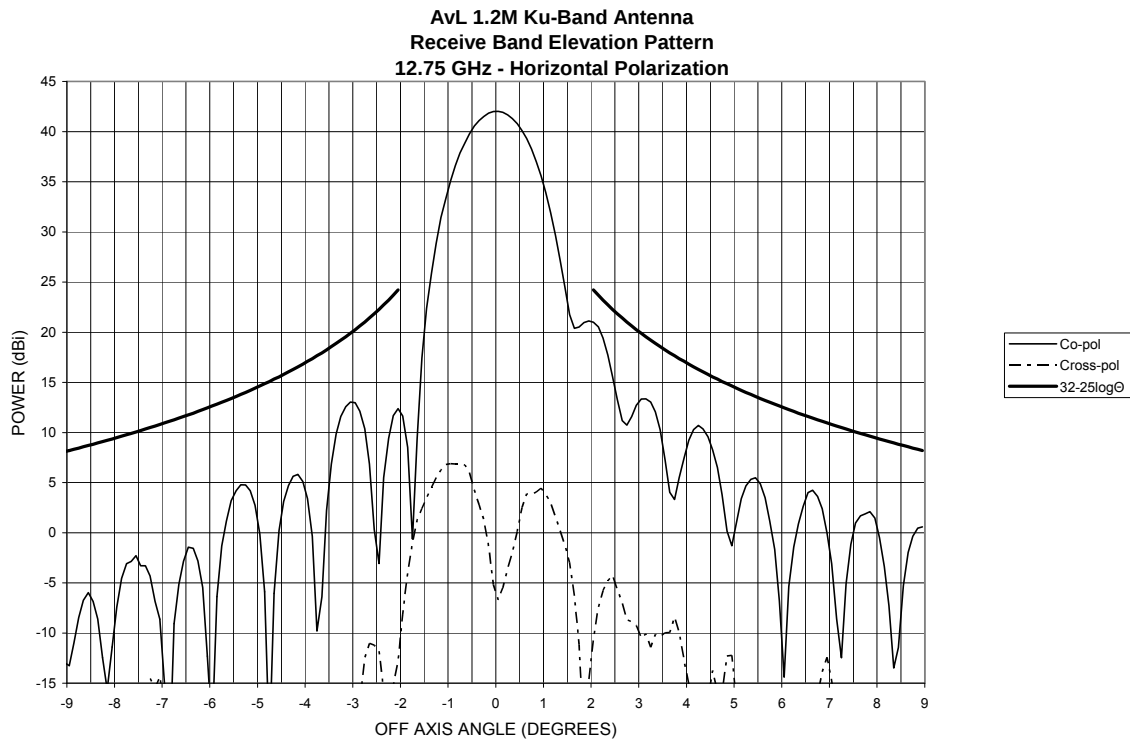
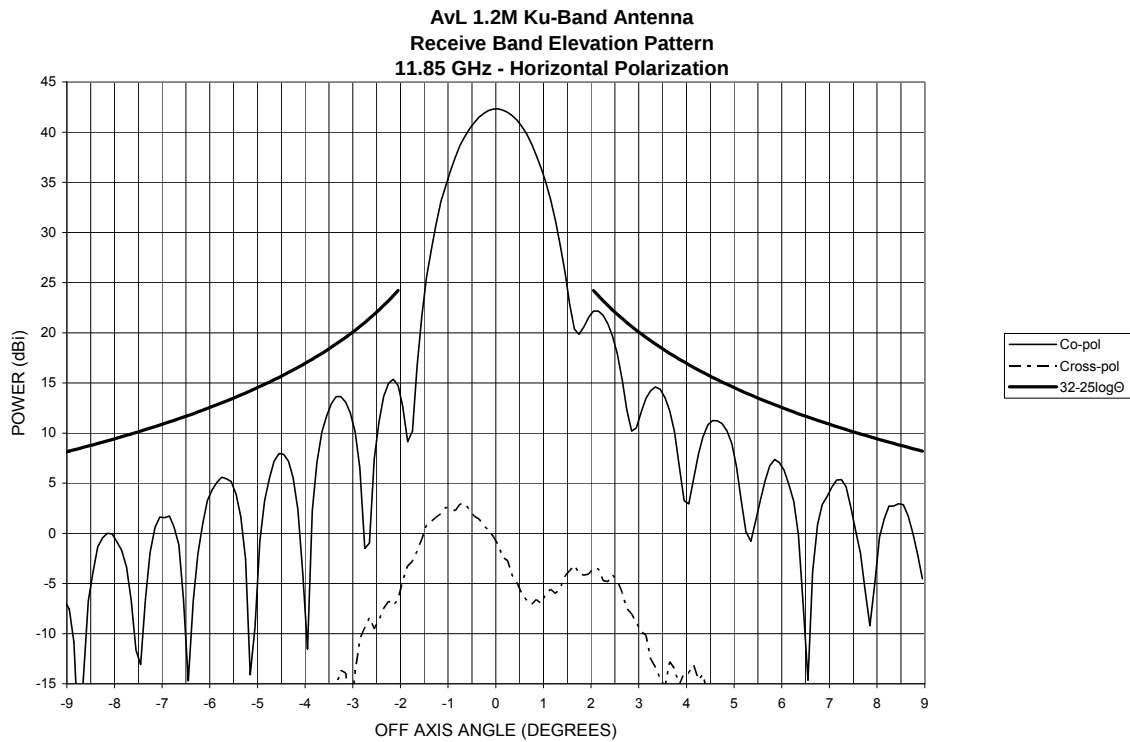




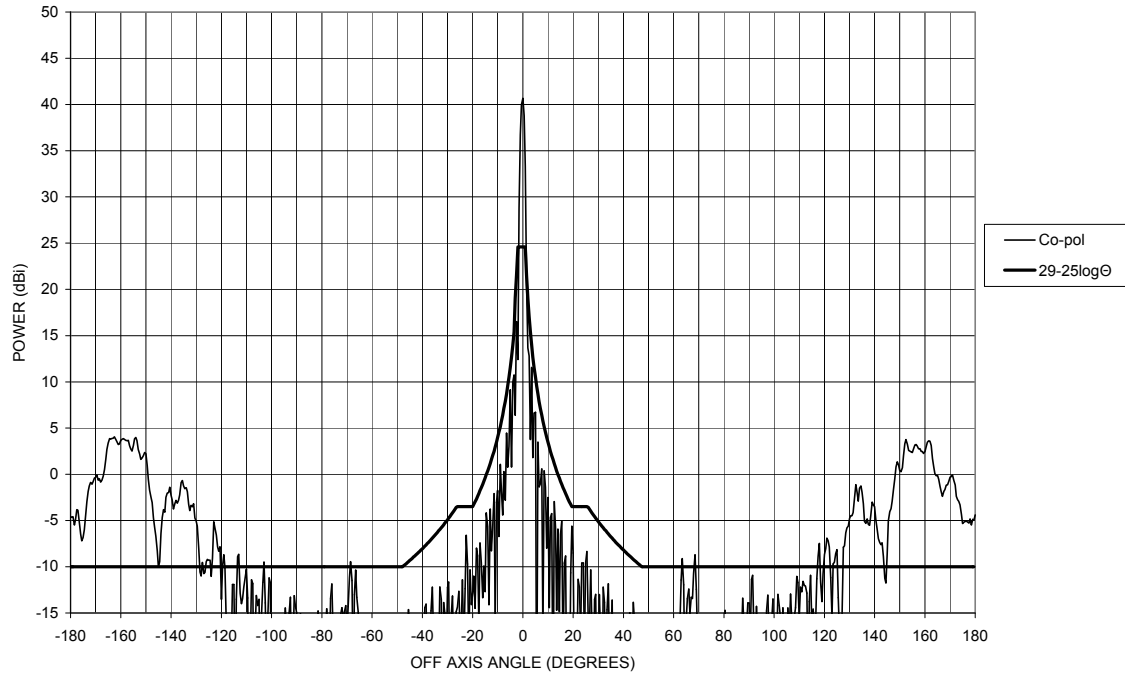




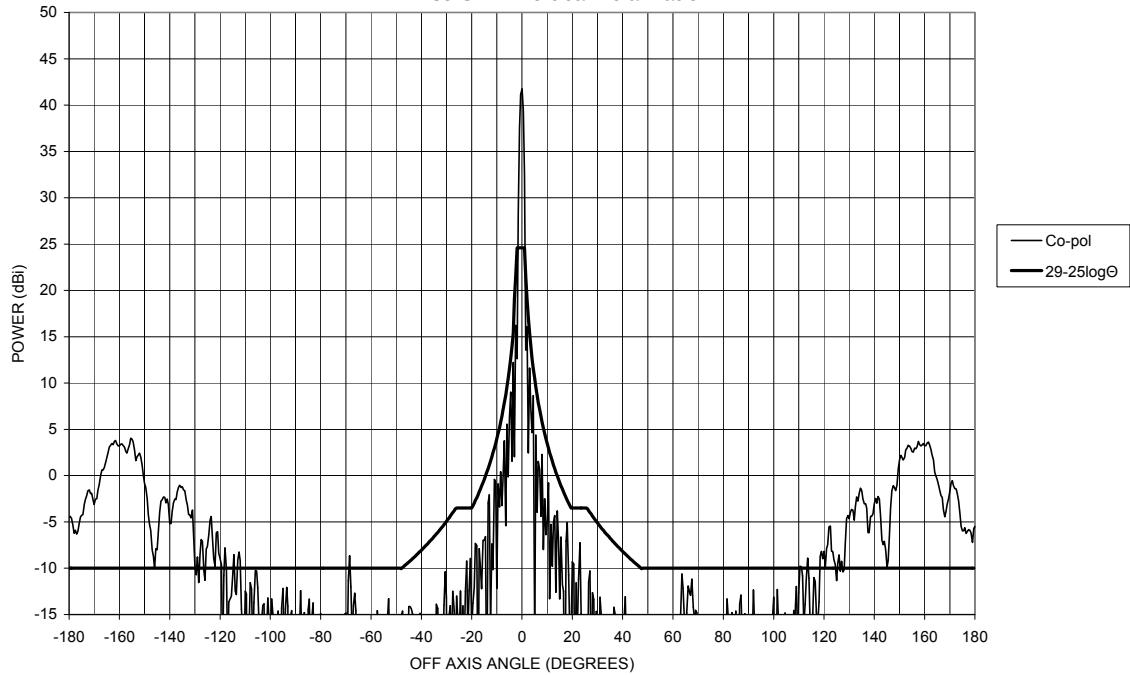




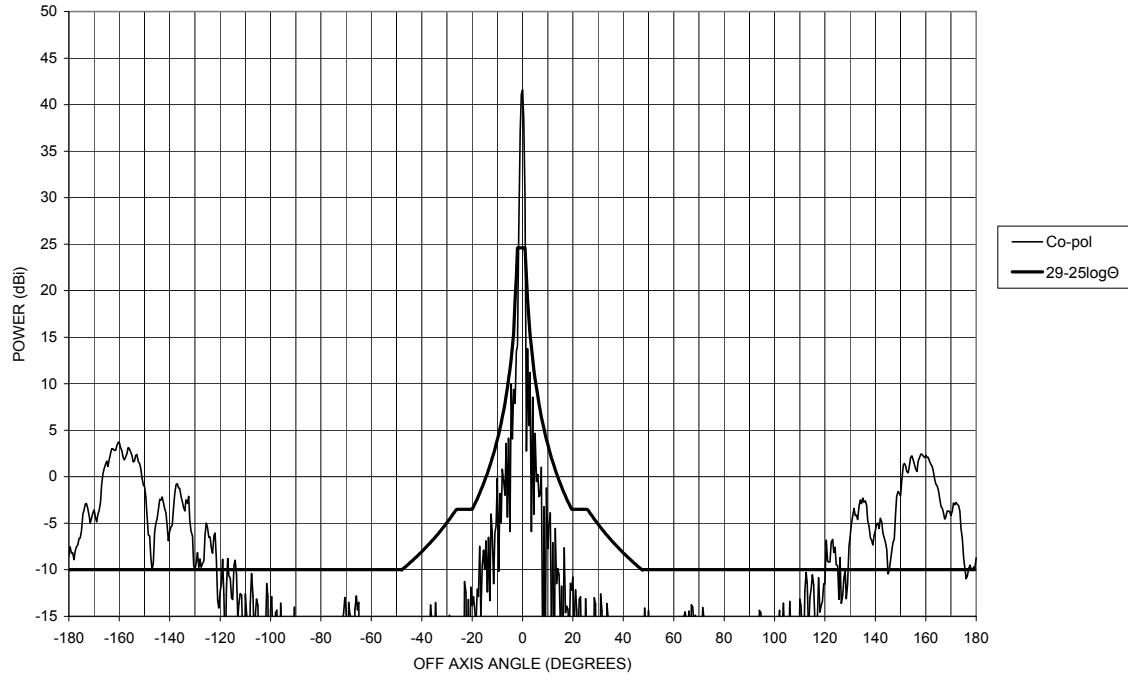
AvL 1.2M Ku-Band Antenna
Receive Band Azimuth Pattern
10.95 GHz - Vertical Polarization



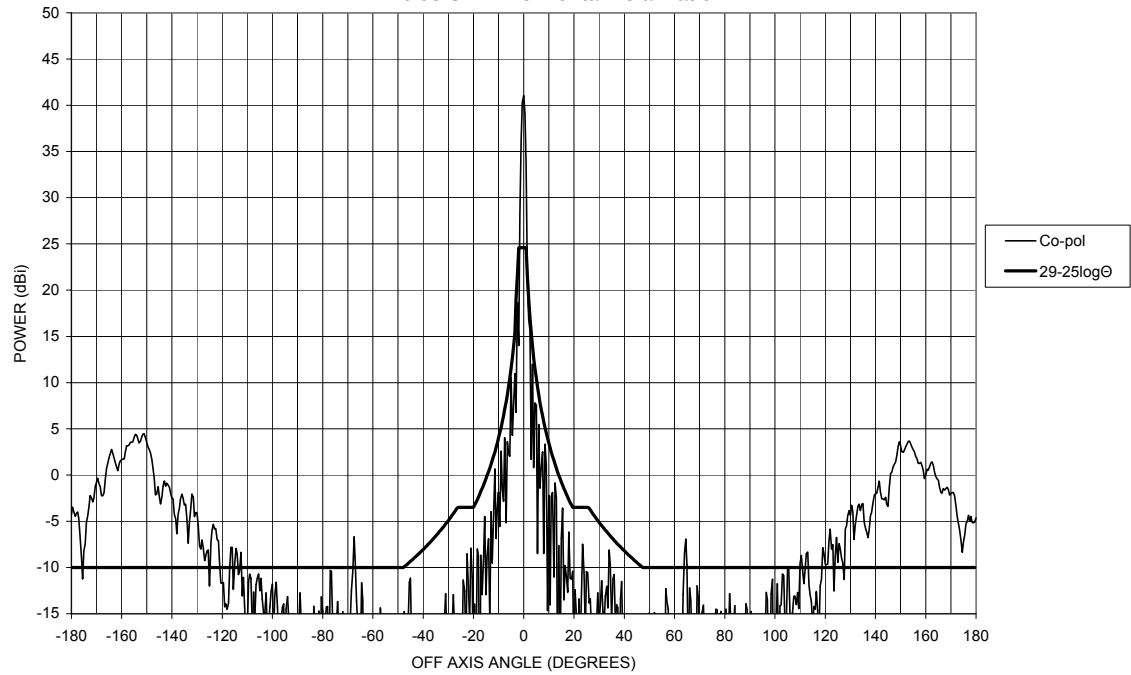
AvL 1.2M Ku-Band Antenna
Receive Band Azimuth Pattern
11.85 GHz - Vertical Polarization



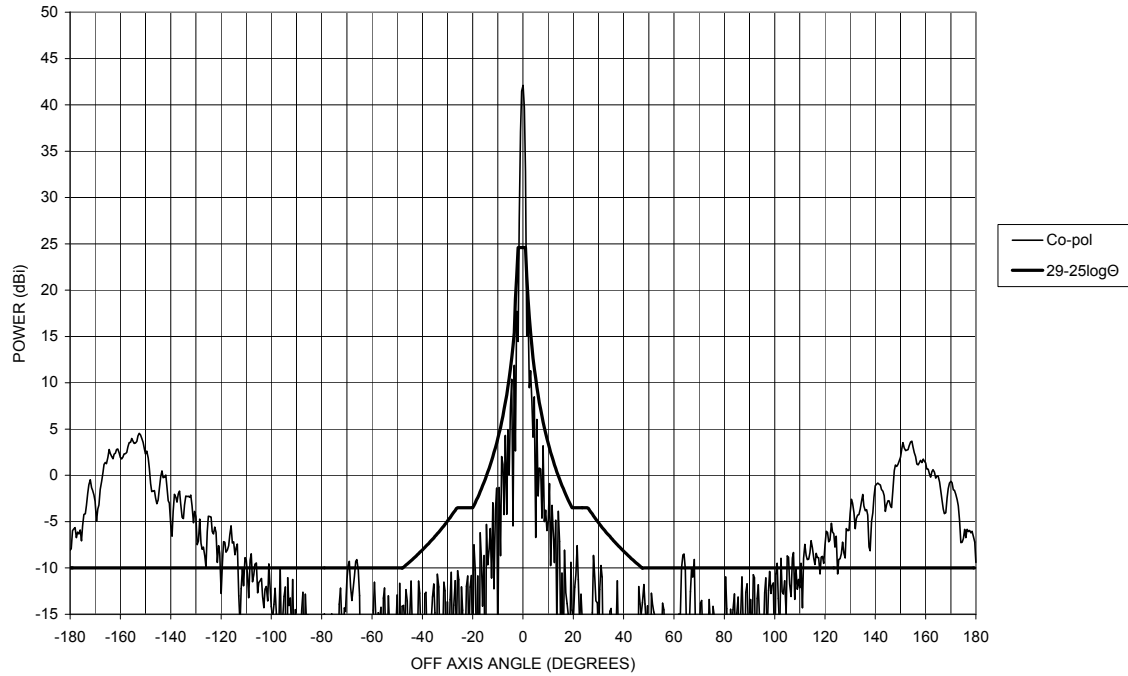
AvL 1.2M Ku-Band Antenna
Receive Band Azimuth Pattern
12.75 GHz - Vertical Polarization



AvL 1.2M Ku-Band Antenna
Receive Band Azimuth Pattern
10.95 GHz - Horizontal Polarization



**AvL 1.2M Ku-Band Antenna
Receive Band Azimuth Pattern
11.85 GHz - Horizontal Polarization**



**AvL 1.2M Ku-Band Antenna
Receive Band Azimuth Pattern
12.75 GHz - Horizontal Polarization**

