Exhibit B

FCC Form 312, Response to Question E15: Antenna Gain Patterns

AVL .6m

Exhibit B

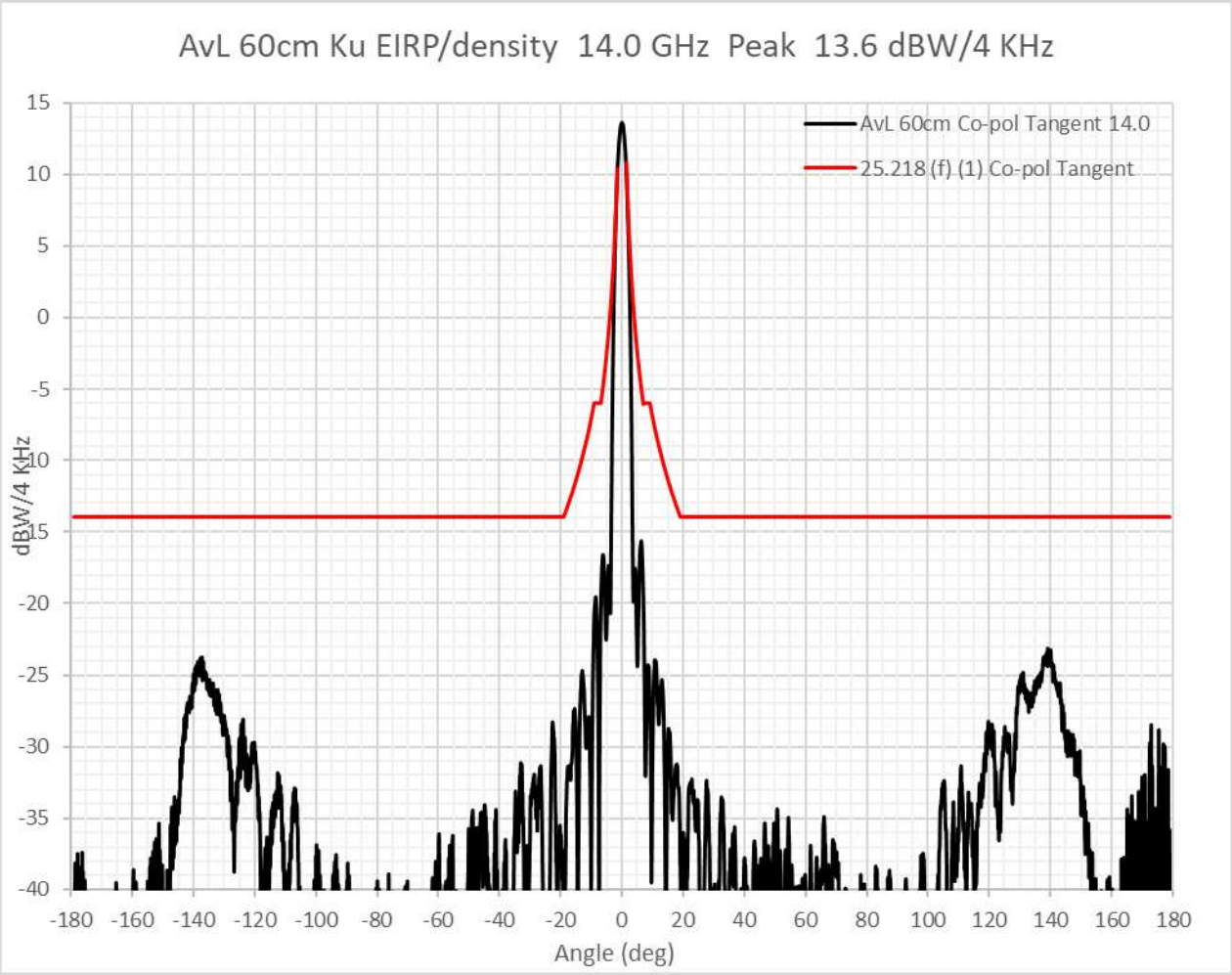
Maximum ESD for 60cm = 13.6 dBW/4KHz for 14.0 ~ 14.5GHz

EIRP SPECTRAL DENSITY FOR AvL 60cm Ku Terminal

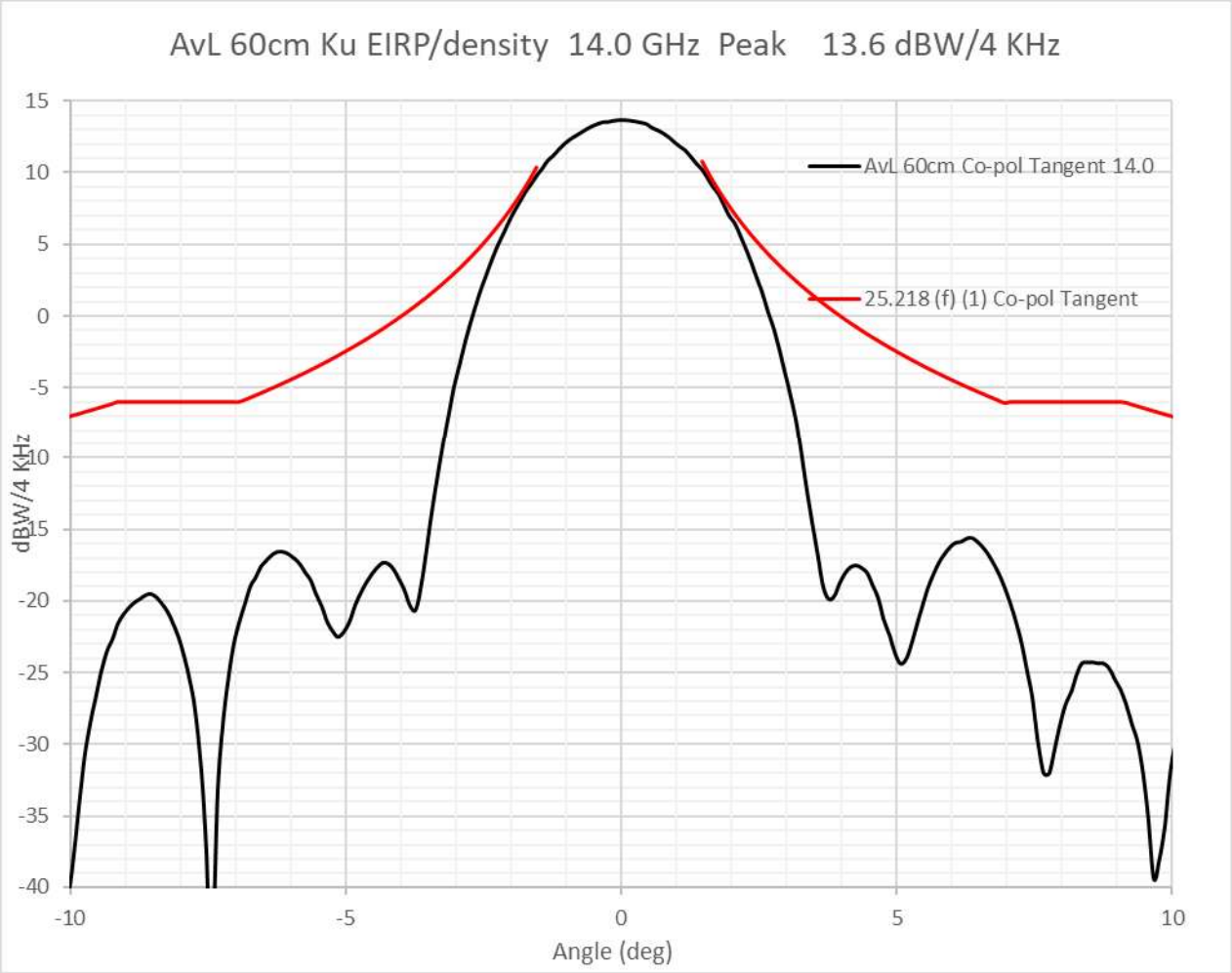
To ensure the EIRP spectral density envelopes specified in §25.218(f) 1-3 are satisfied, the maximum EIRP spectral density is limited. The EIRP density compliance for this terminal is shown below.

1. **EIRP density plots (14.0 GHz, peak EIRP/density: 13.6 dBW/ 4KHz)**

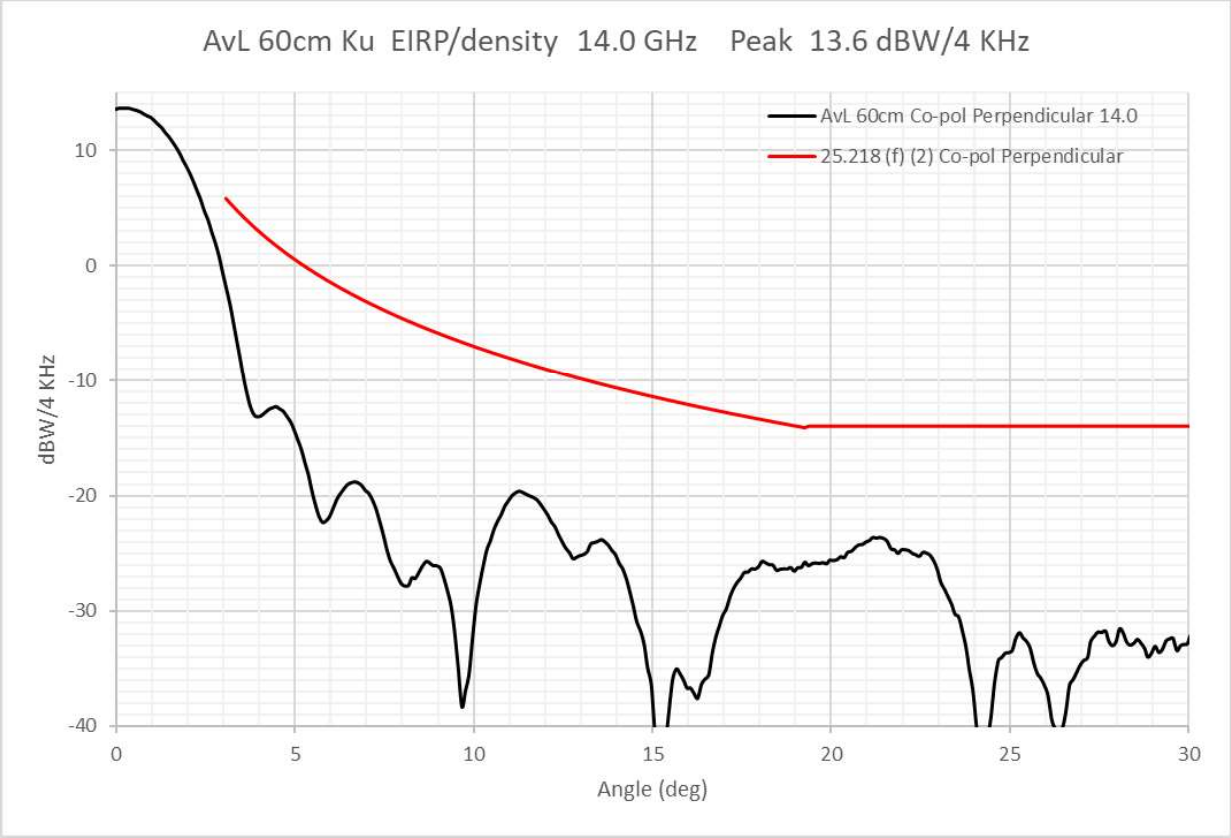
(i) Co-Pol EIRP density in the plane tangent to the GSO



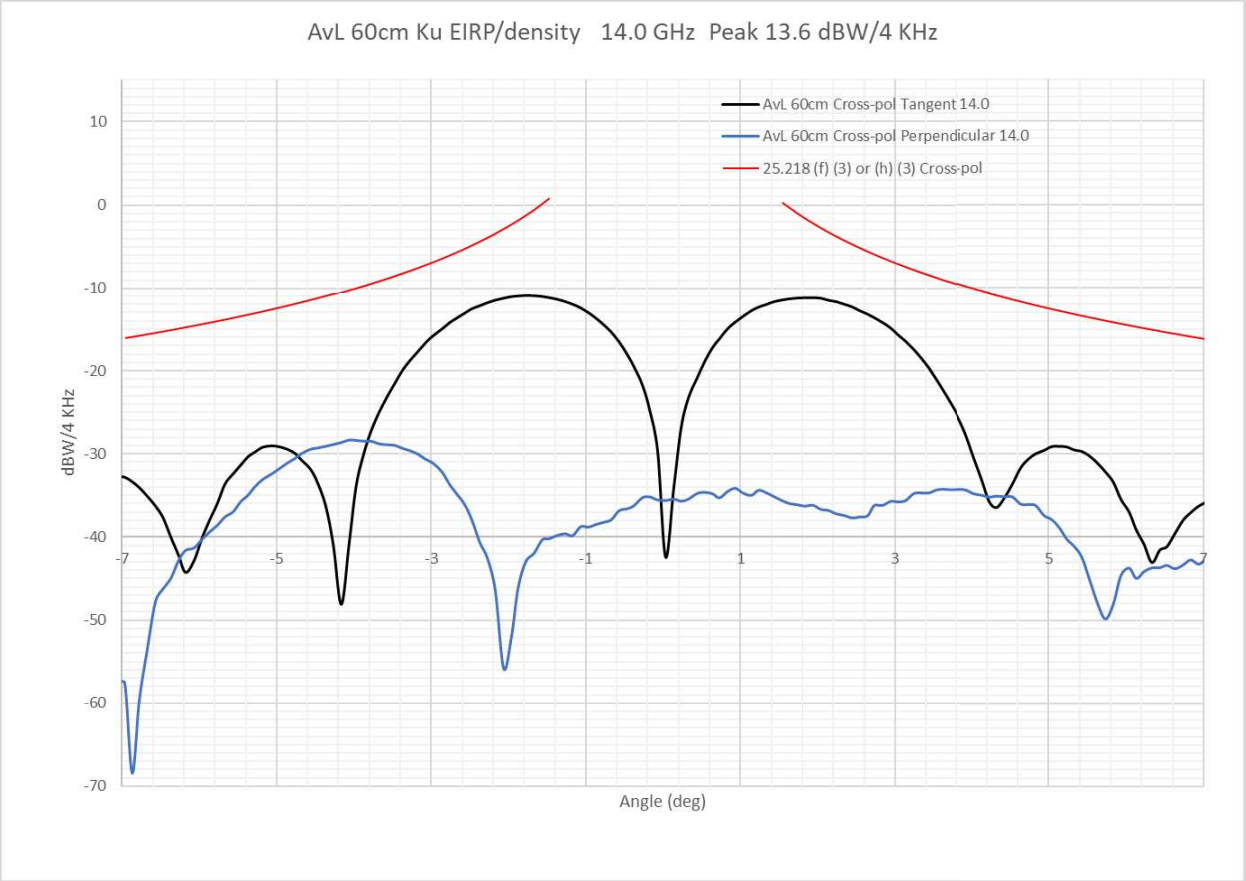
(ii) Co-Pol EIRP density in the plane tangent to the GSO



(iii) Co-Pol EIRP density in the plane perpendicular to the GSO arc

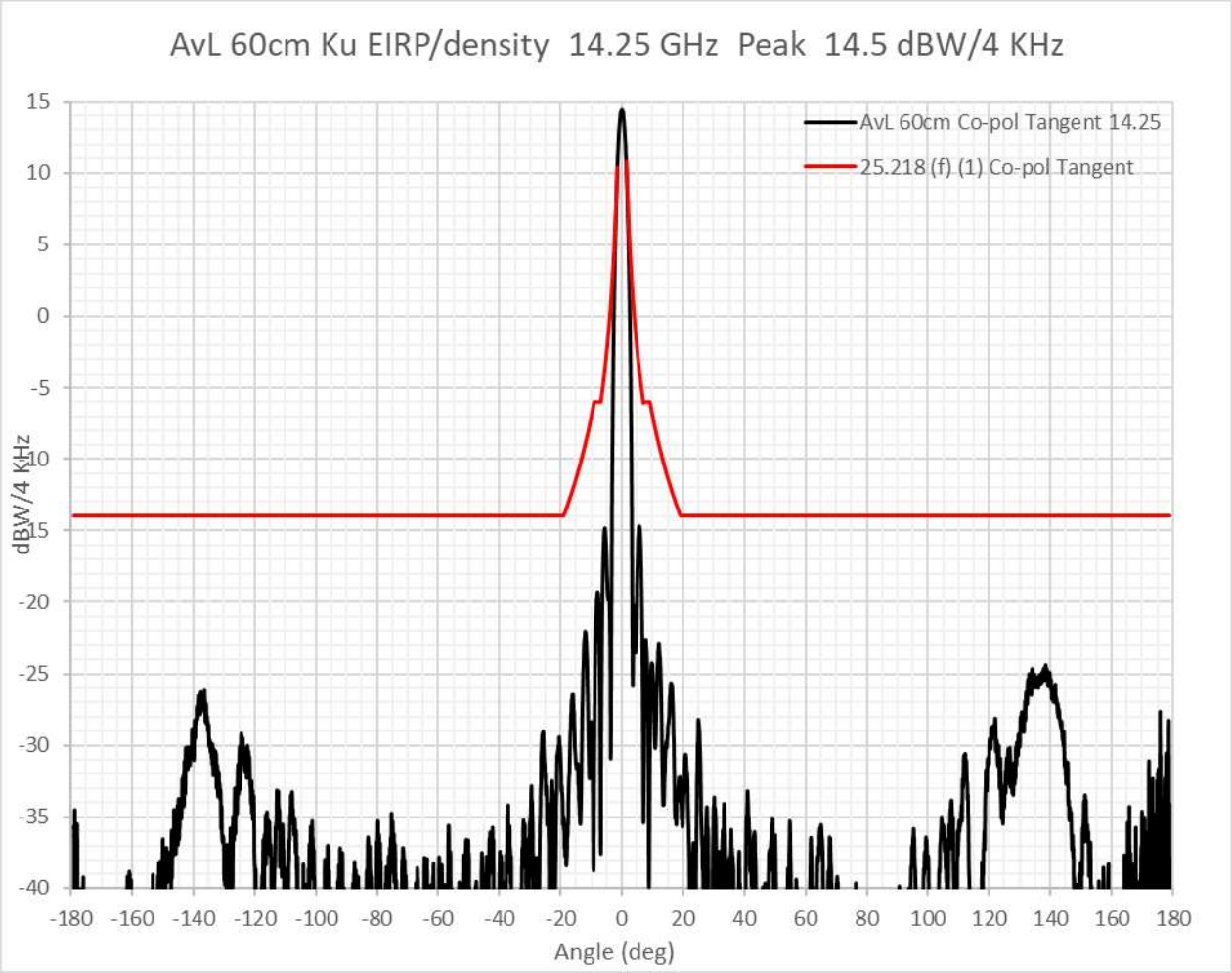


(iv-v) Cross--Pol EIRP density in the plane tangent and perpendicular to the GSO arc



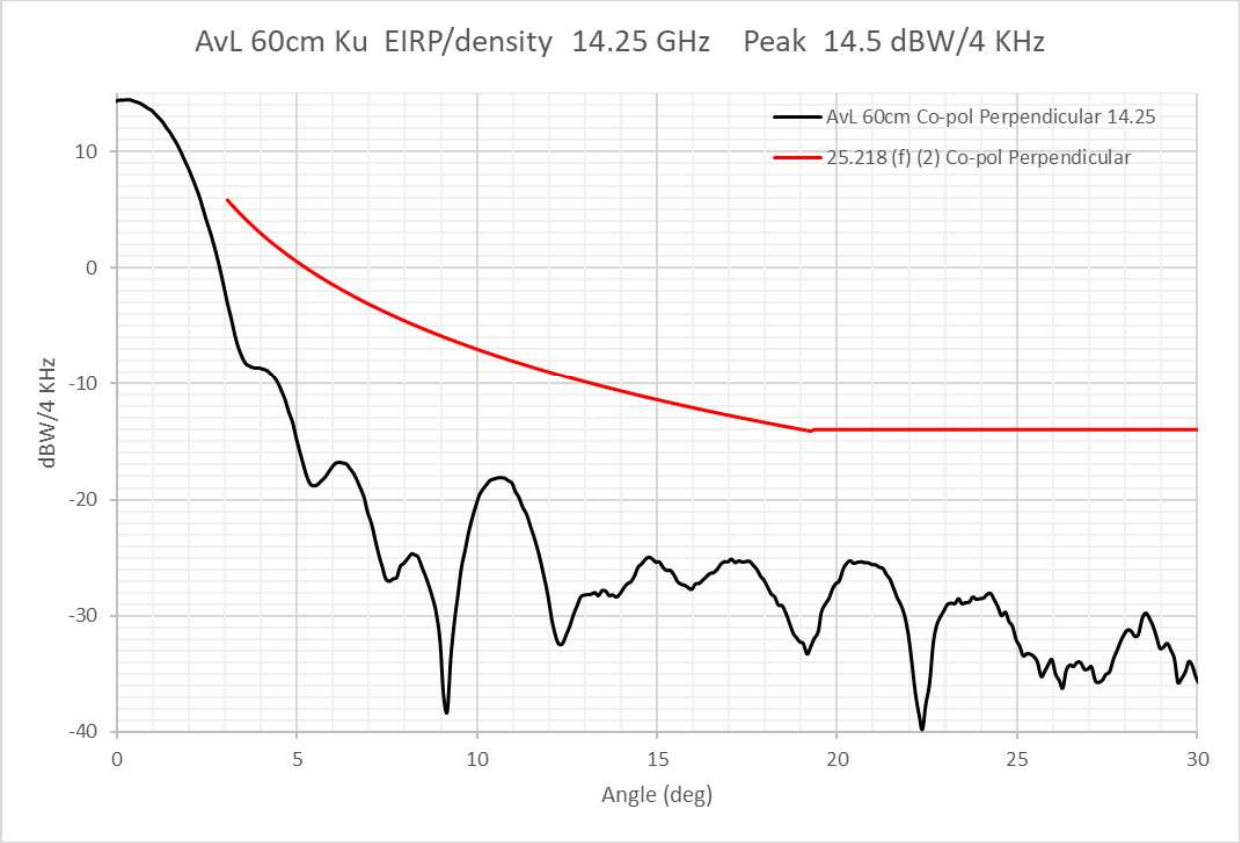
2. EIRP density plots (14.25 GHz, peak EIRP/density – 14.5 dBW/ 4KHz)

(i) Co-Pol EIRP density in the plane tangent to the GSO arc

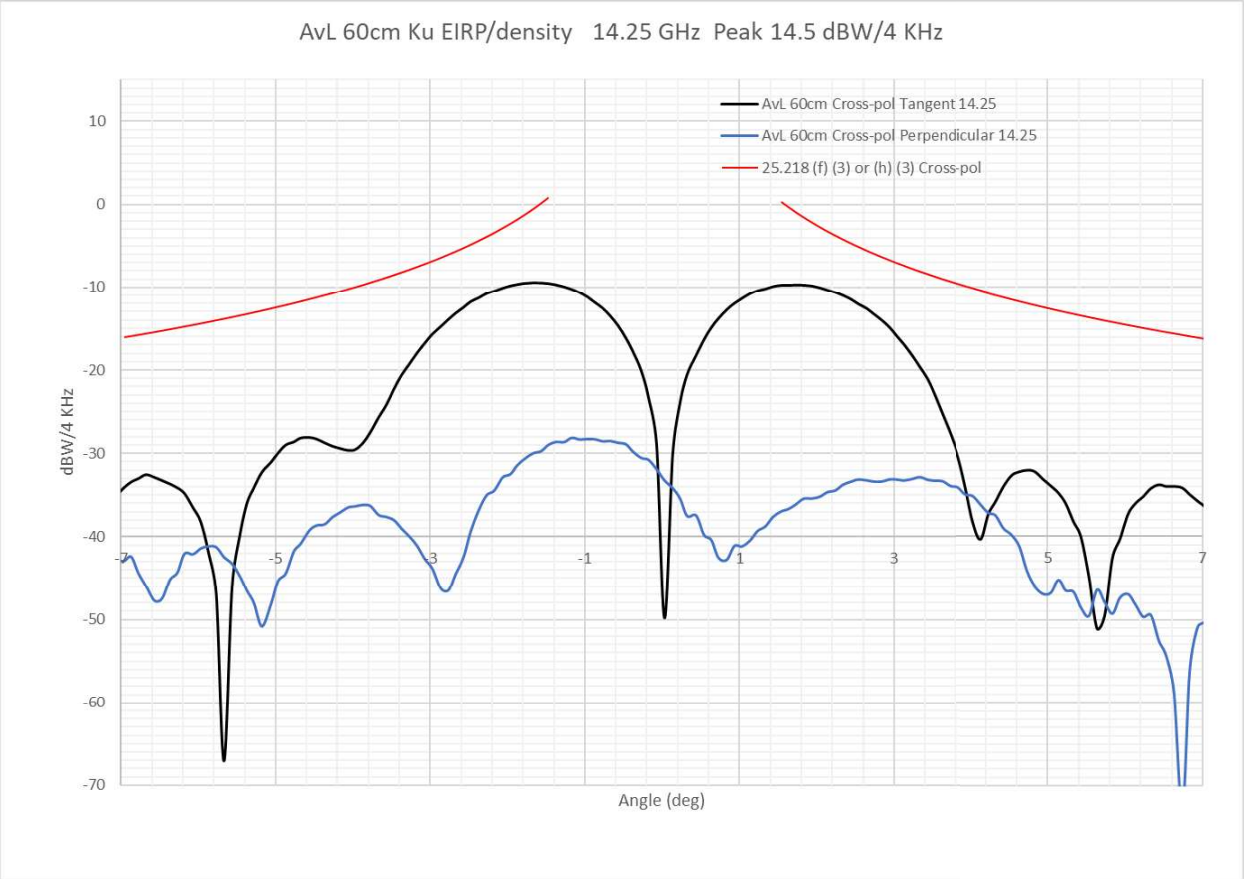


(ii) Co-Pol EIRP density in the plane tangent to the GSO arc

(iii) Co-Pol EIRP density in the plane perpendicular to the GSO arc

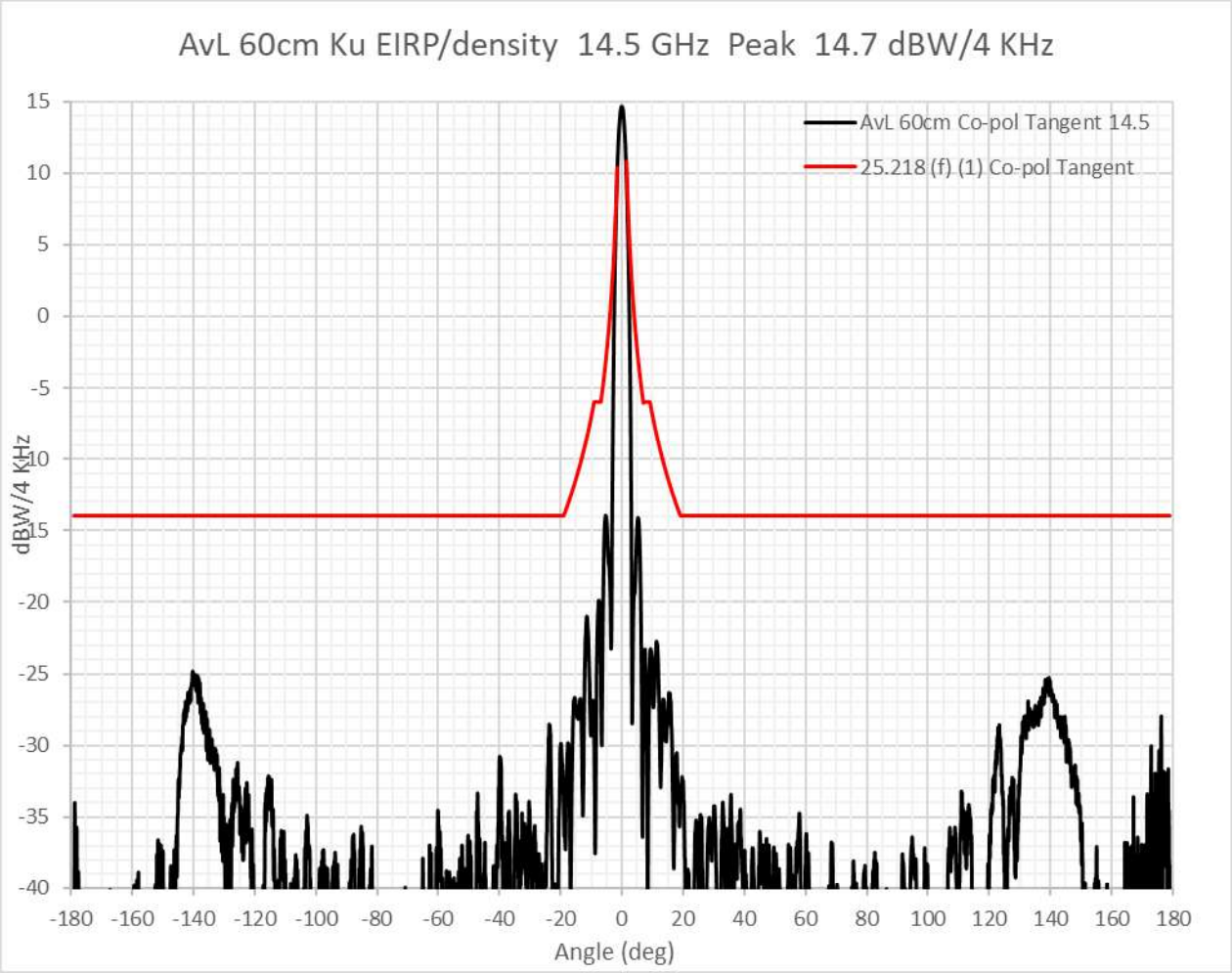


(iv-v) Cross-Pol EIRP density in the plane tangent and perpendicular to the GSO arc

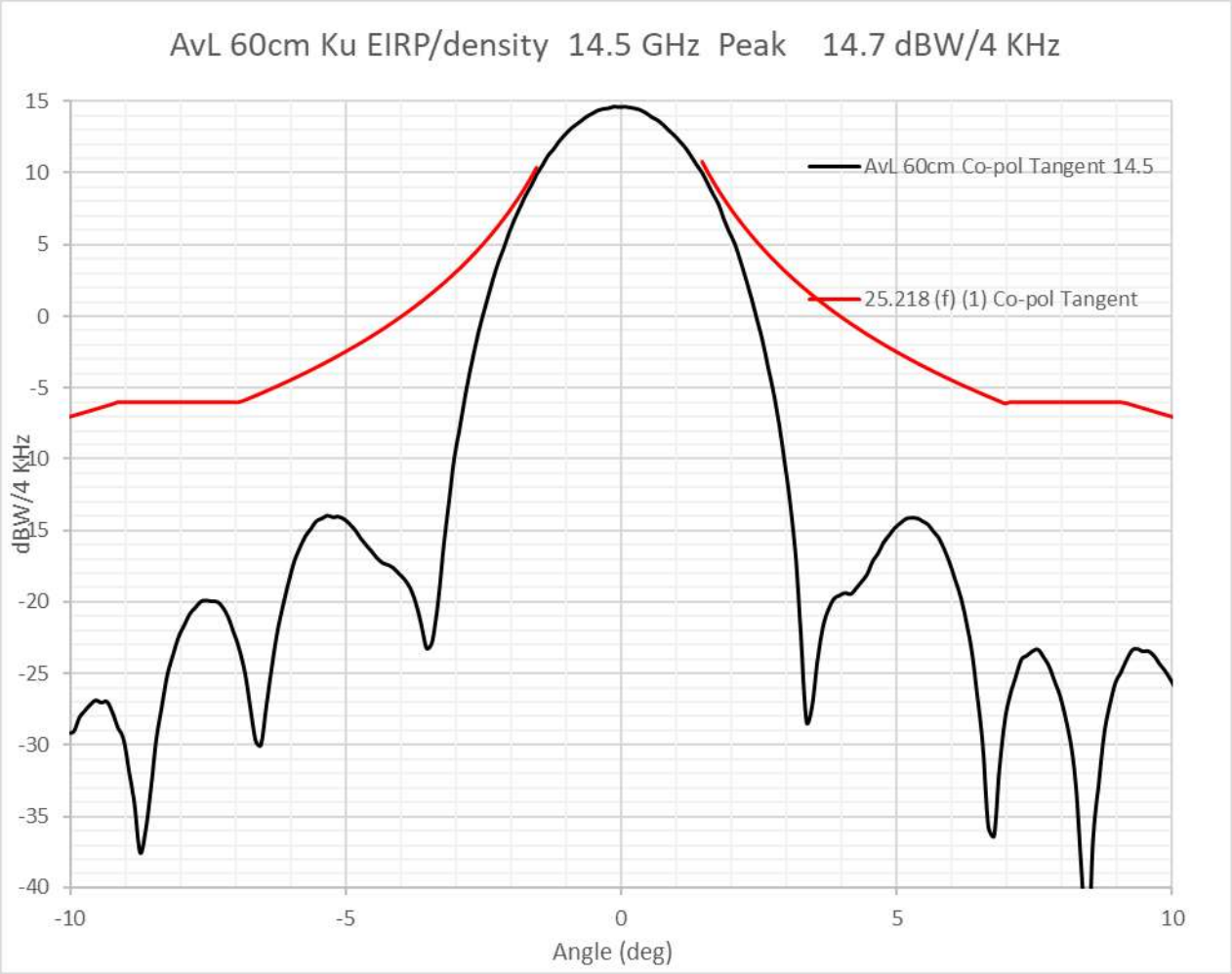


3. EIRP density plots (14.5 GHz, peak EIRP/density – 14.7 dBW/ 4KHz)

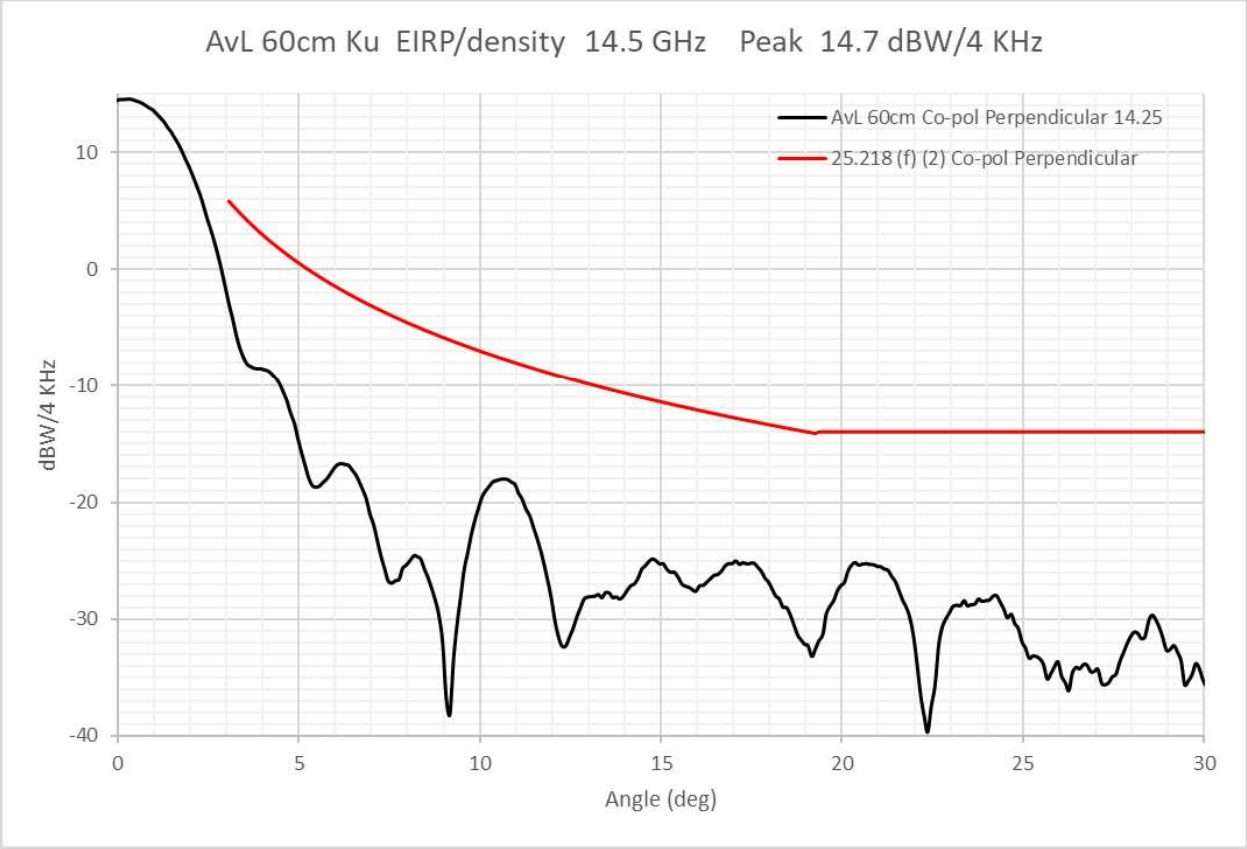
(i) Co-Pol EIRP density in the plane tangent to the GSO arc



(ii) Co-Pol EIRP density in the plane tangent to the GSO arc



(iii) Co-Pol EIRP density in the plane perpendicular to the GSO arc



(iv-v) Cross-Pol EIRP density in the plane tangent and perpendicular to the GSO arc

AVL .75m

Exhibit B

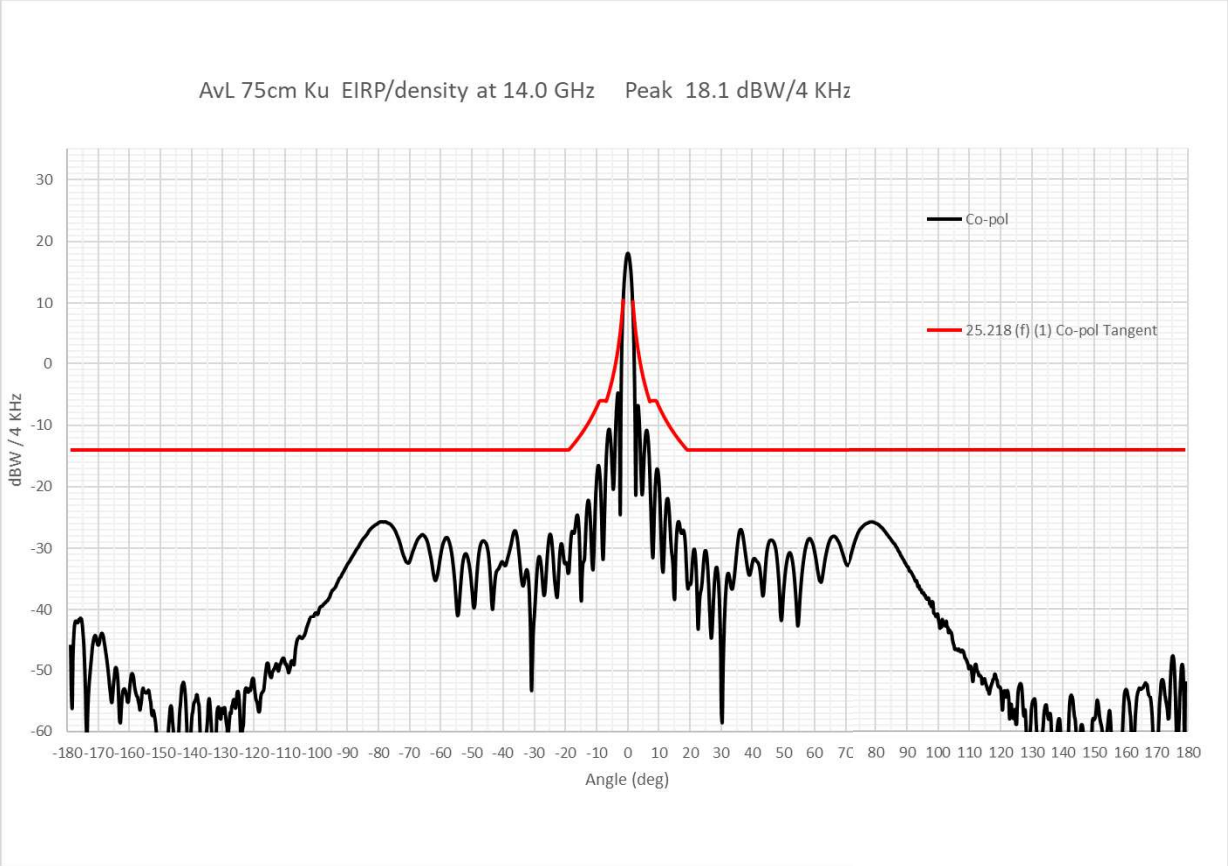
Maximum ESD for 75cm = 17.8 dBW/4KHz for 14.0 ~ 14.5GHz

EIRP SPECTRAL DENSITY FOR AvL 75cm Terminal

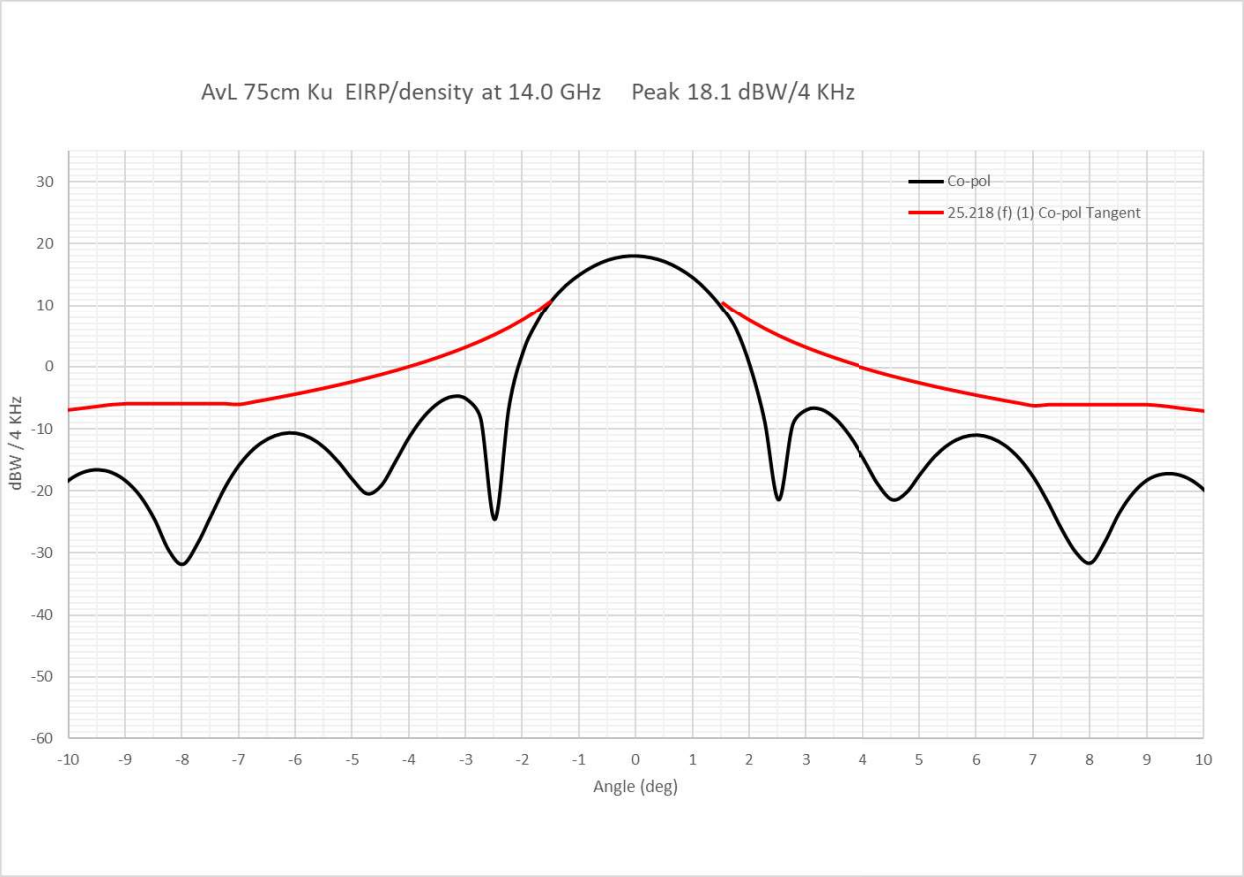
To ensure the EIRP spectral density envelopes specified in §25.218(f) 1-3 are satisfied, the maximum EIRP spectral density is limited.The EIRP density compliance for this terminal is shown below.

1. **EIRP density plots (14.0 GHz, peak EIRP/density: 18.1 dBW/ 4KHz)**

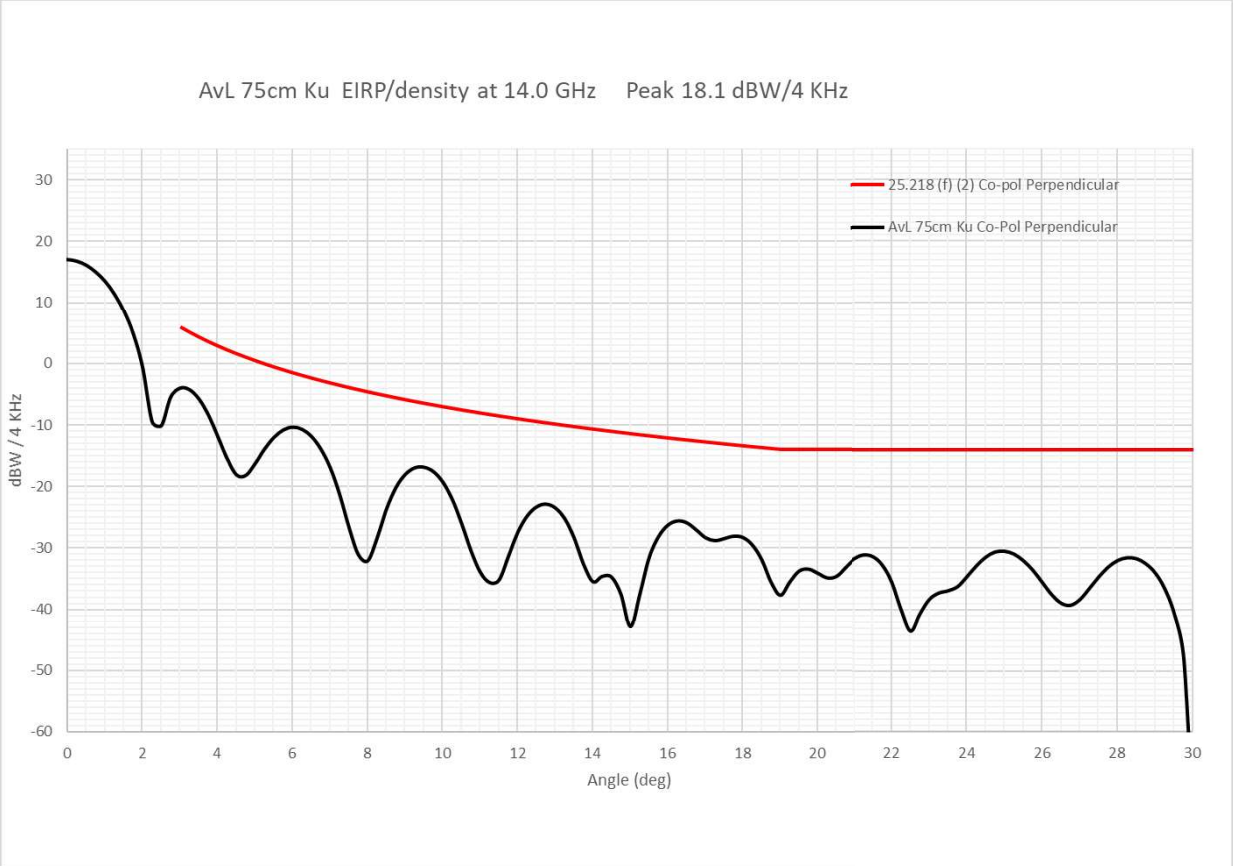
(i) Co-Pol EIRP density in the plane tangent to the GSO



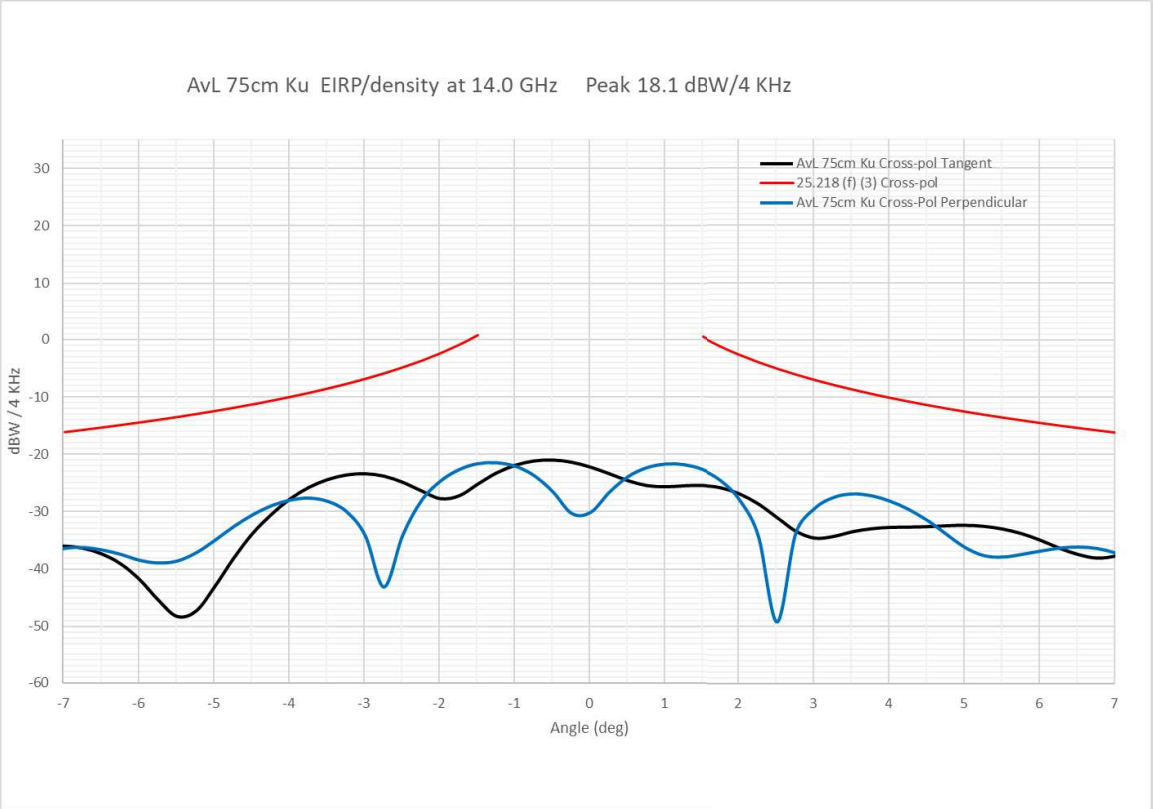
(ii) Co-Pol EIRP density in the plane tangent to the GSO



(iii) Co-Pol EIRP density in the plane perpendicular to the GSO arc

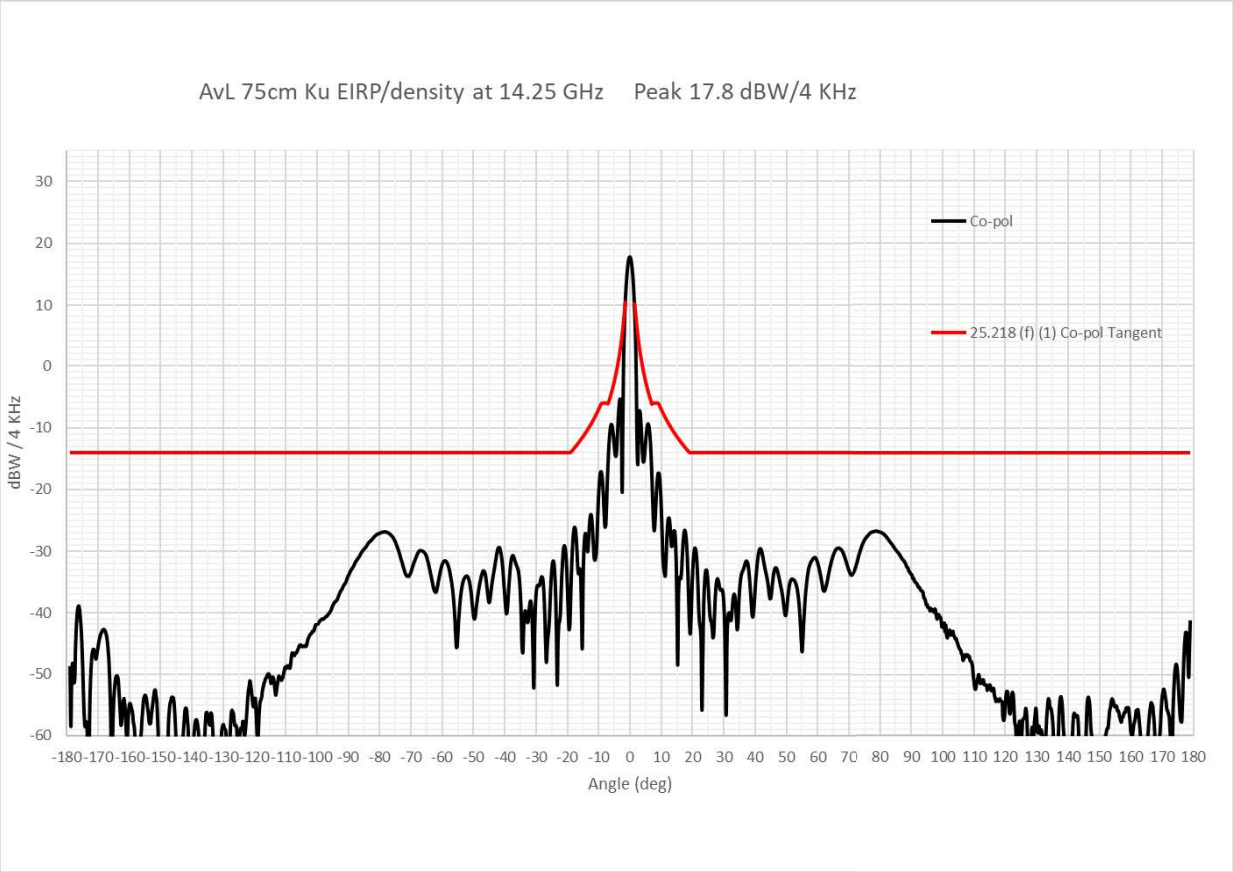


(iv-v) Cross--Pol EIRP density in the plane tangent and perpendicular to the GSO arc

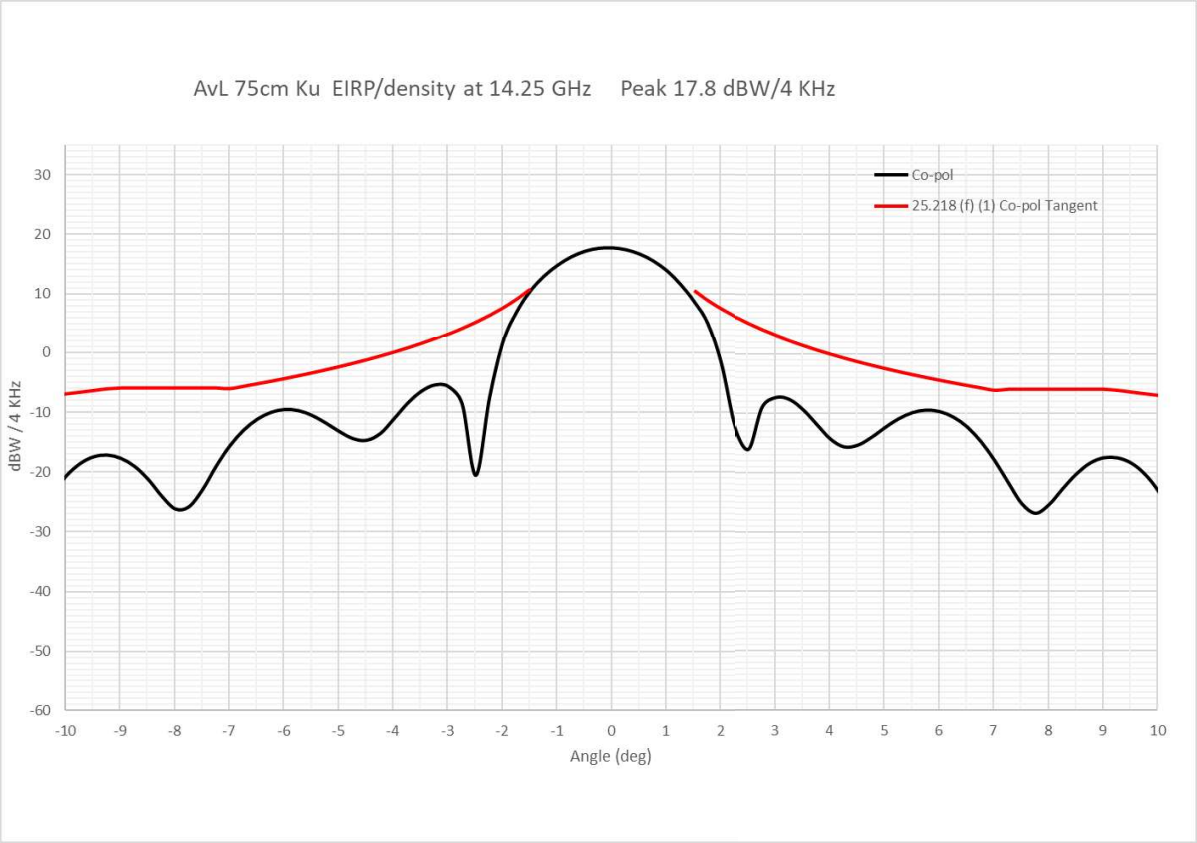


2. EIRP density plots (14.25 GHz, peak EIRP/density: 17.8 dBW/ 4KHz)

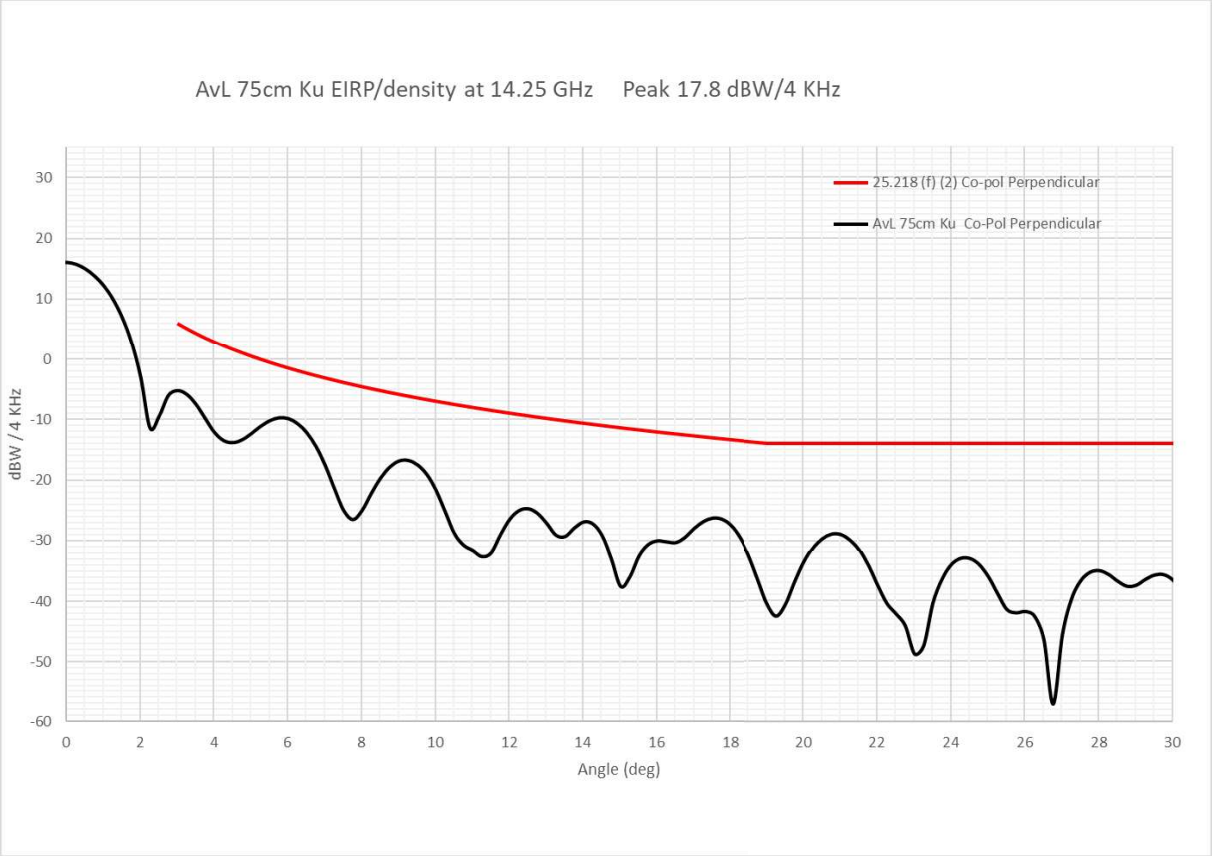
(i) Co-Pol EIRP density in the plane tangent to the GSO



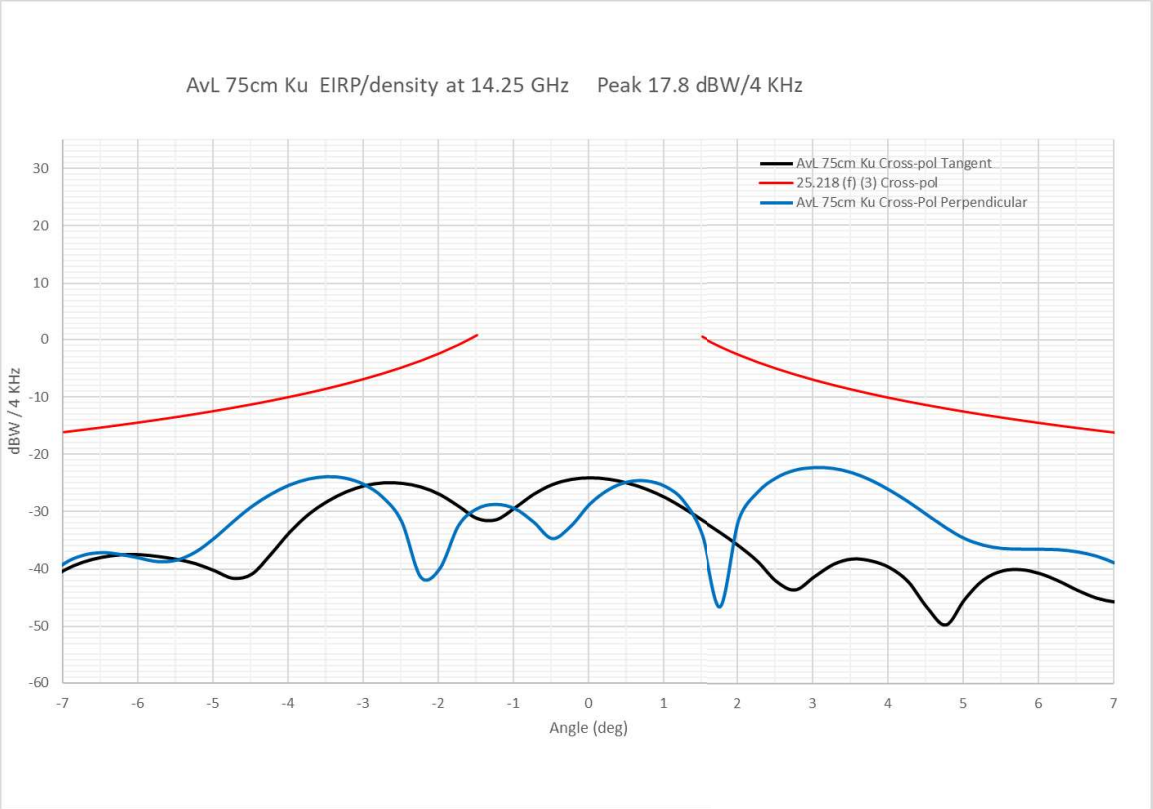
(ii) Co-Pol EIRP density in the plane tangent to the GSO



(iii) Co-Pol EIRP density in the plane perpendicular to the GSO arc

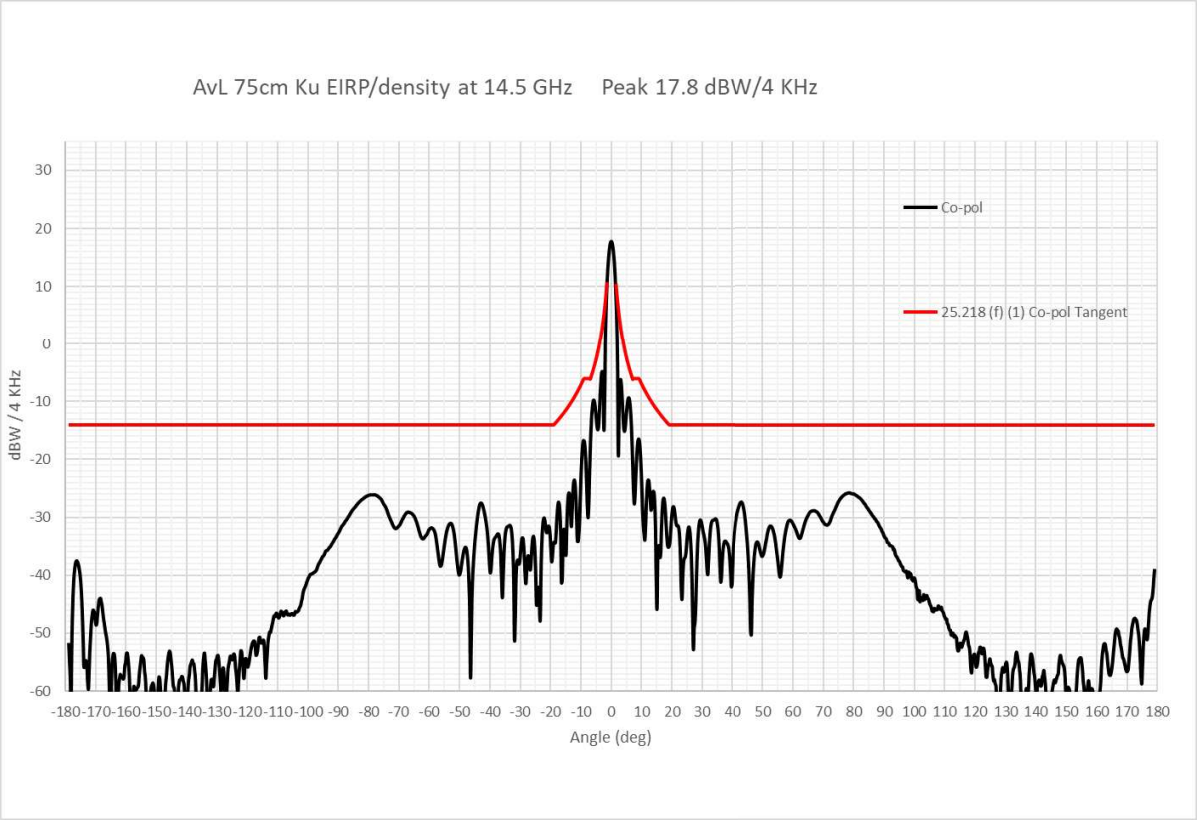


(iv-v) Cross--Pol EIRP density in the plane tangent and perpendicular to the GSO arc

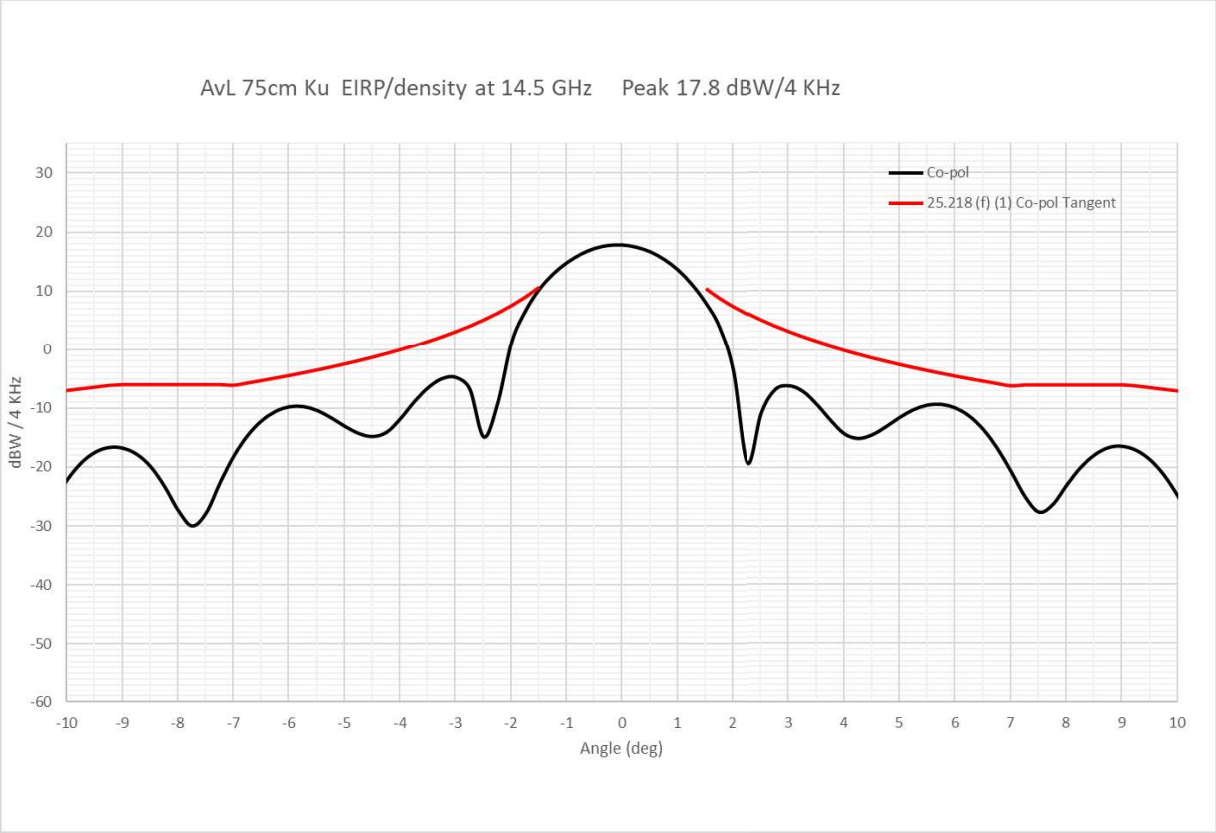


3. EIRP density plots (14.5 GHz, peak EIRP/density: 17.8 dBW/ 4KHz)

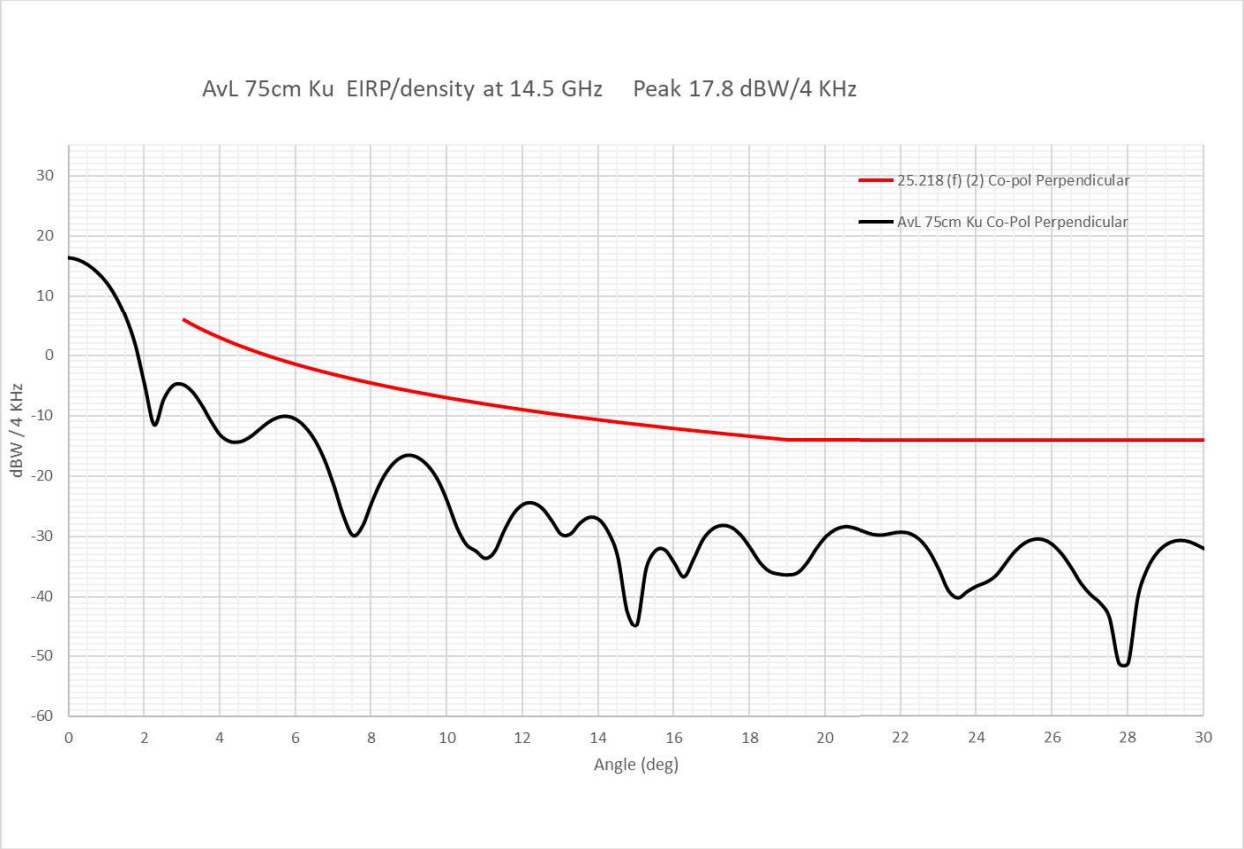
(i) Co-Pol EIRP density in the plane tangent to the GSO



(ii) Co-Pol EIRP density in the plane tangent to the GSO



(iii) Co-Pol EIRP density in the plane perpendicular to the GSO arc



(iv-v) Cross--Pol EIRP density in the plane tangent and perpendicular to the GSO arc

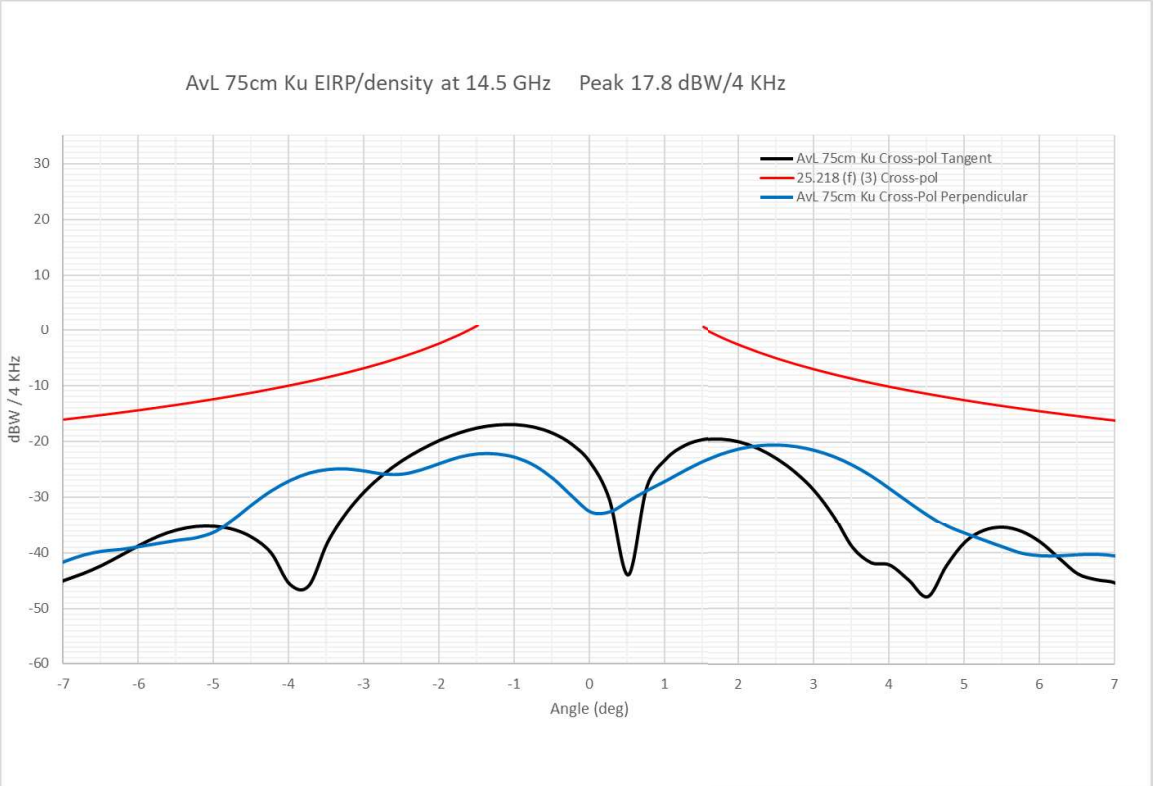


Exhibit B

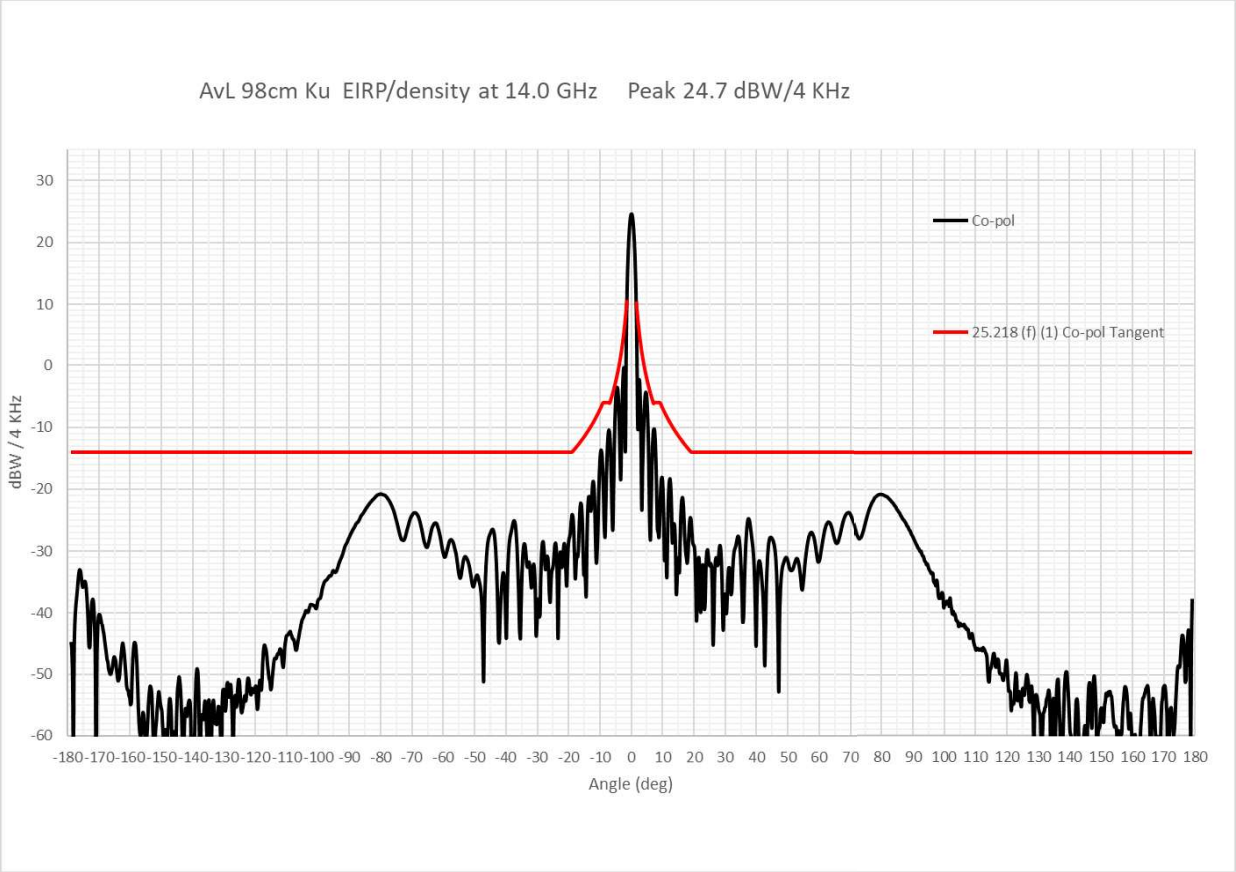
Maximum ESD for 98cm = 24.7 dBW/4KHz for 14.0 ~ 14.5GHz

EIRP SPECTRAL DENSITY FOR AvL 98cm Terminal

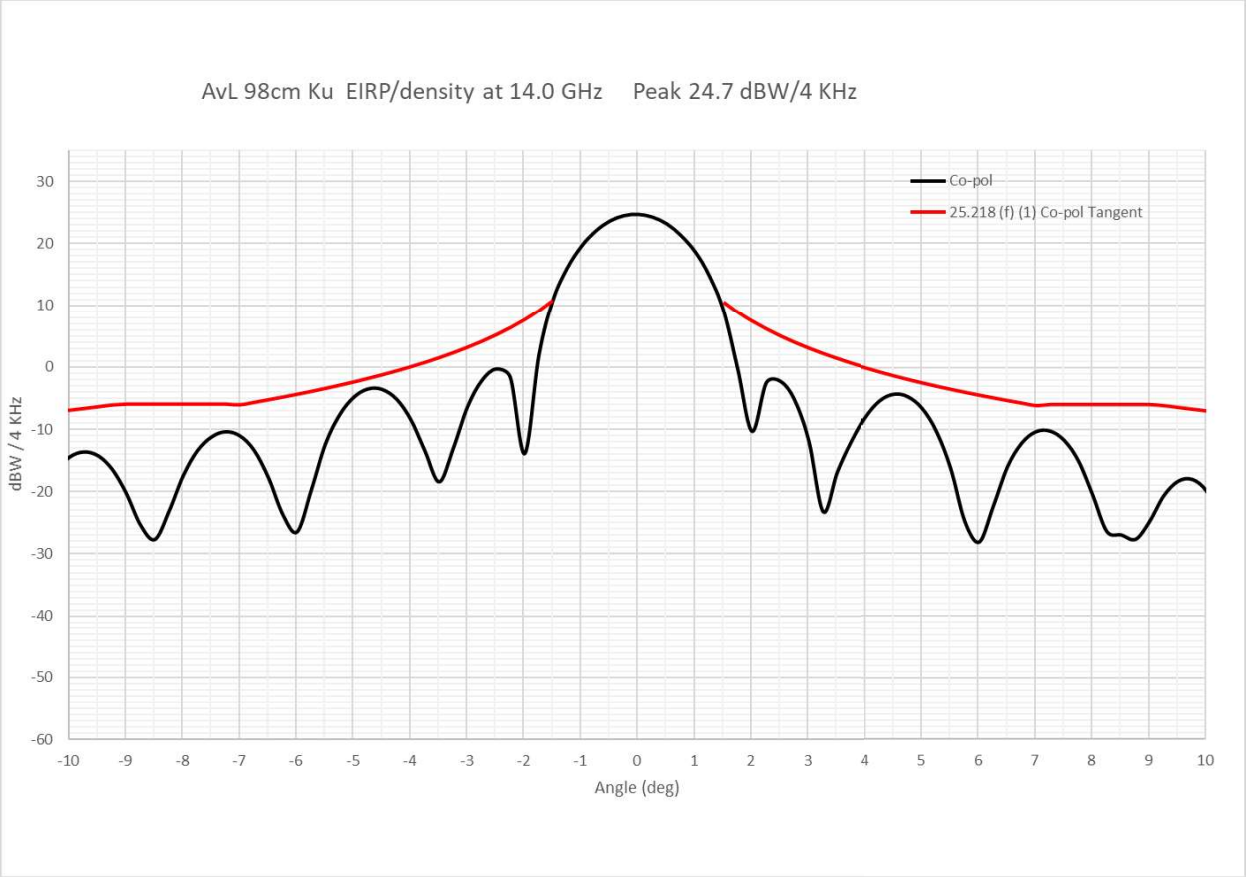
To ensure the EIRP spectral density envelopes specified in §25.218(f) 1-3 are satisfied, the maximum EIRP spectral density is limited. The EIRP density compliance for this terminal is shown below.

1. **EIRP density plots (14.0 GHz, peak EIRP/density: 24.7 dBW/ 4KHz)**

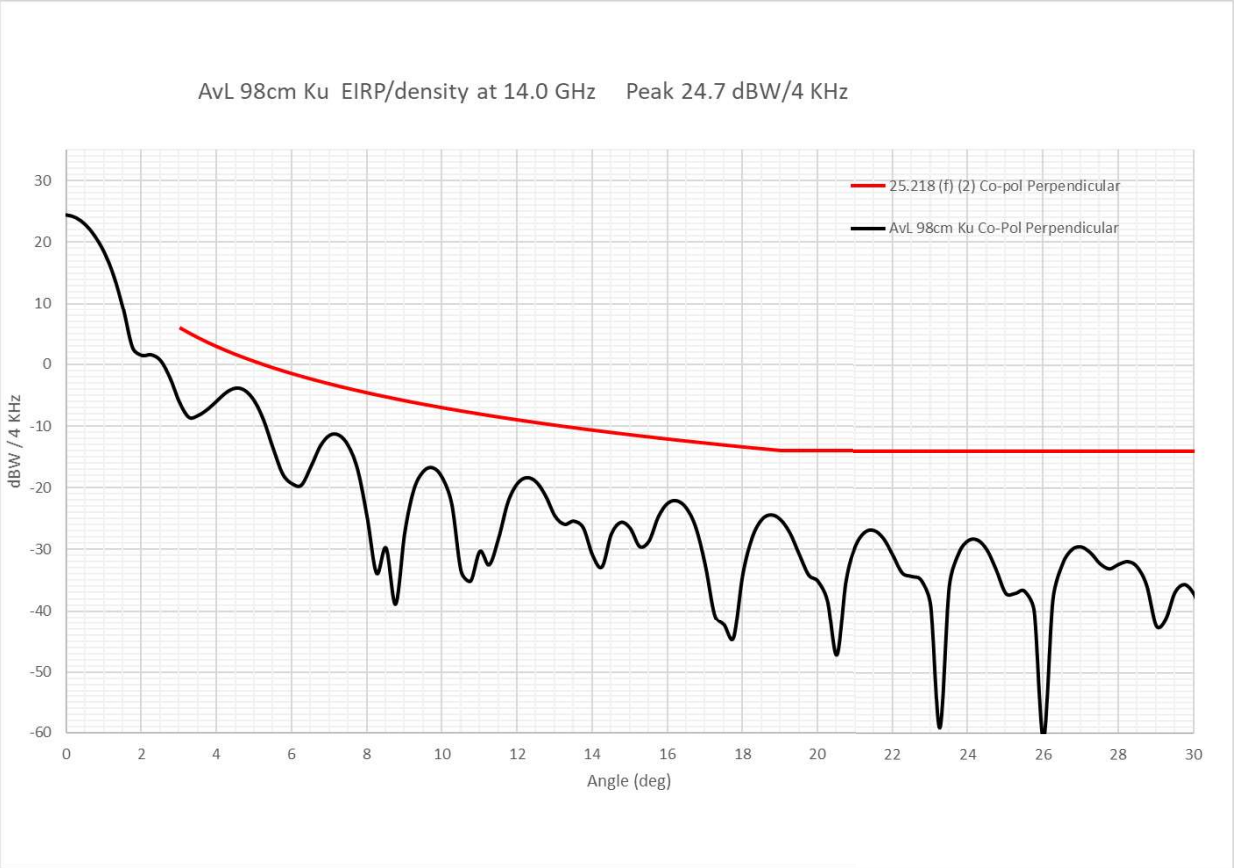
(i) Co-Pol EIRP density in the plane tangent to the GSO



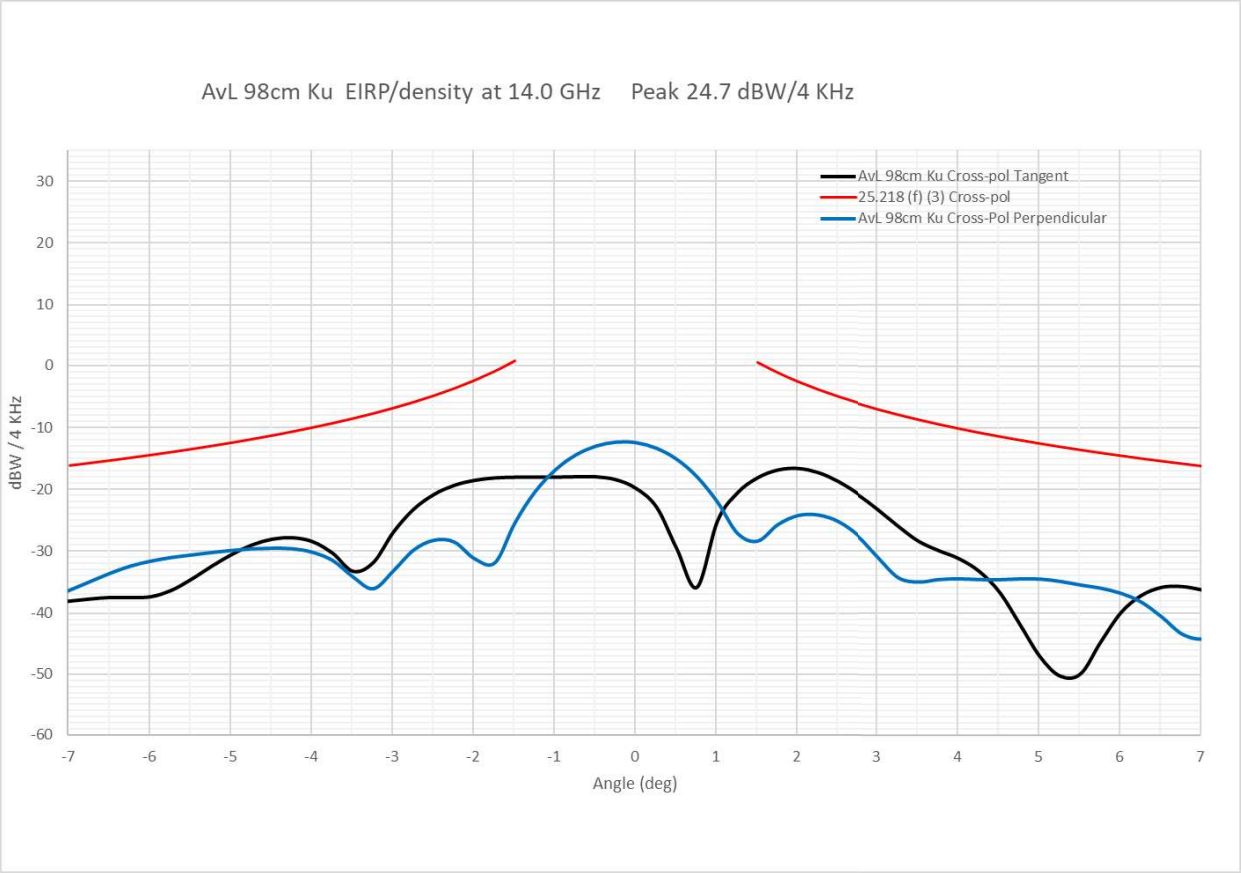
(ii) Co-Pol EIRP density in the plane tangent to the GSO



(iii) Co-Pol EIRP density in the plane perpendicular to the GSO arc

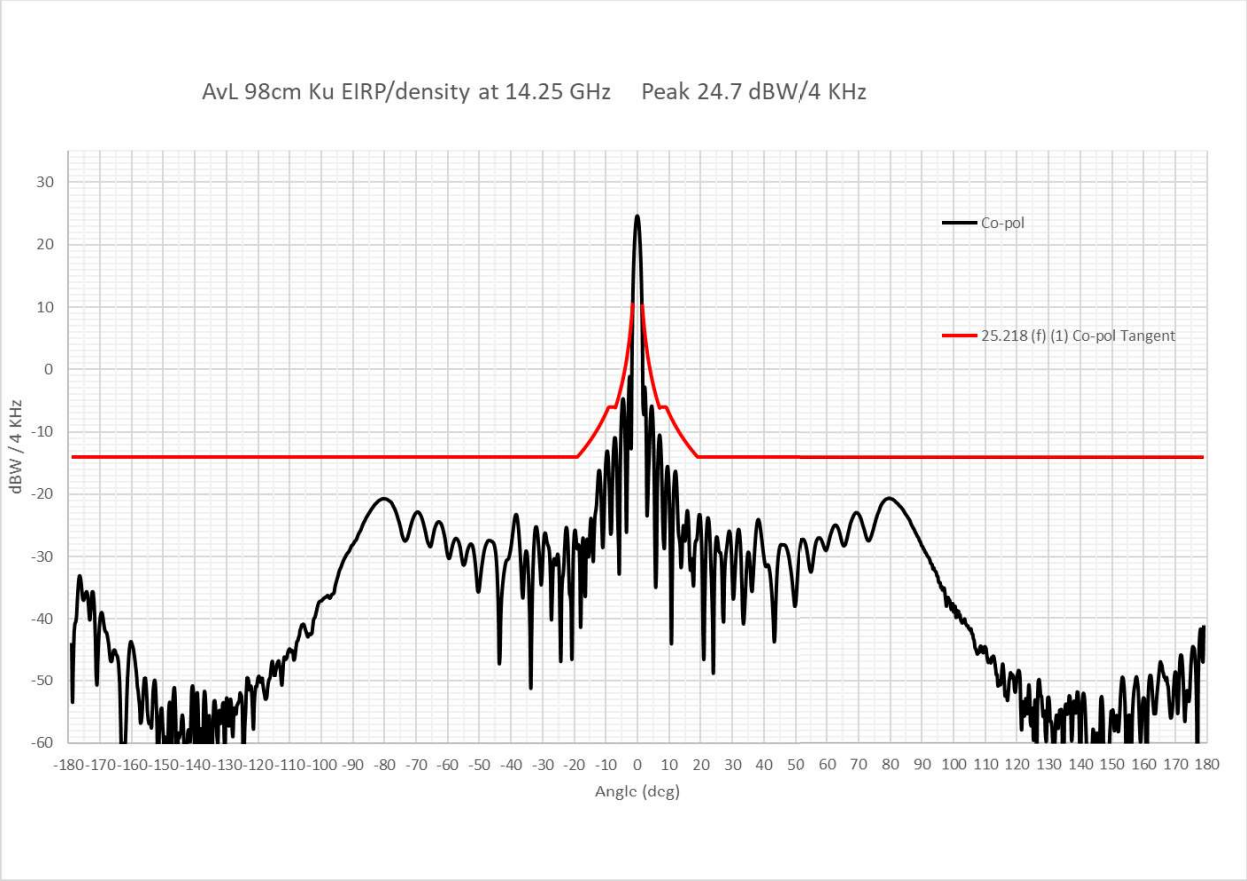


(iv-v) Cross-Pol EIRP density in the plane tangent and perpendicular to the GSO arc

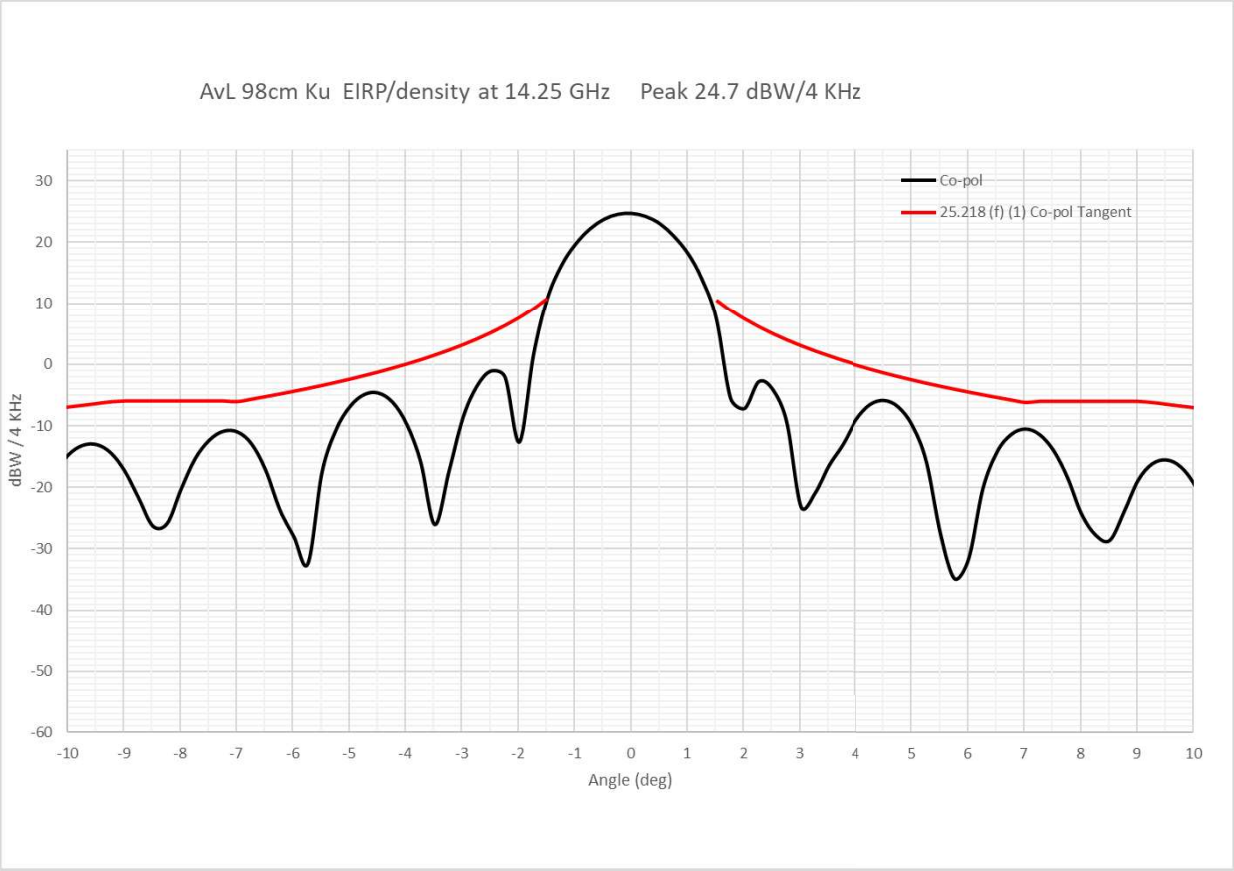


2. EIRP density plots (14.25 GHz, peak EIRP/density: 24.7 dBW/ 4KHz)

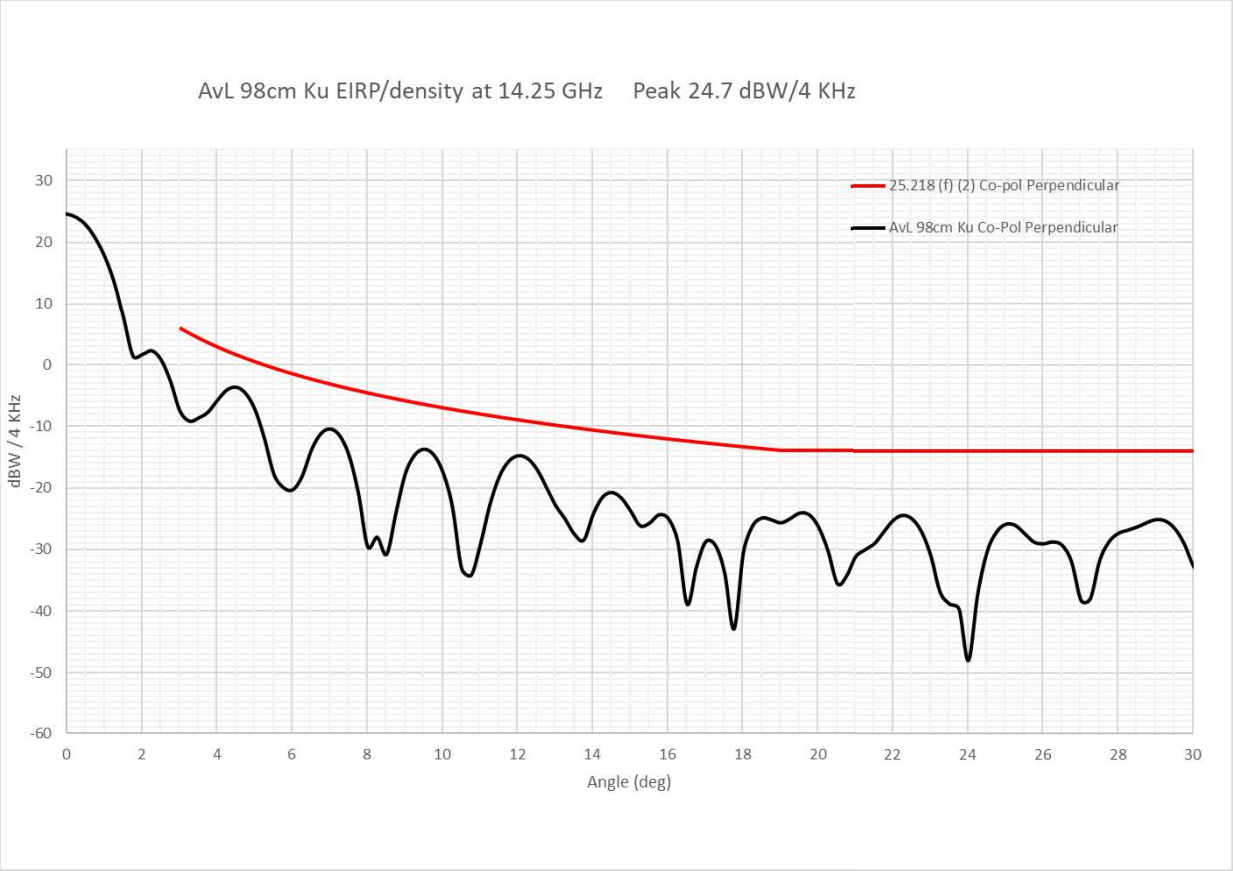
(i) Co-Pol EIRP density in the plane tangent to the GSO



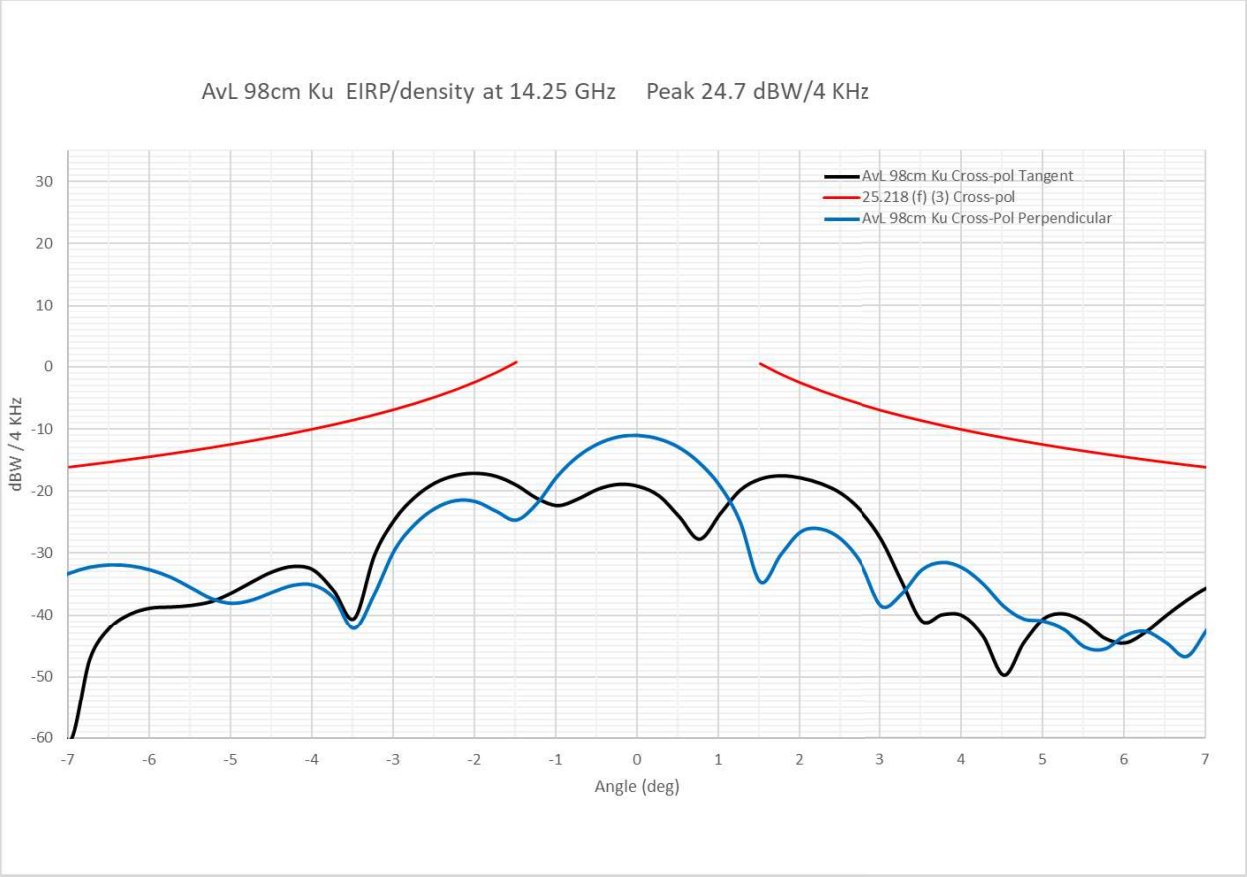
(ii) Co-Pol EIRP density in the plane tangent to the GSO



(iii) Co-Pol EIRP density in the plane perpendicular to the GSO arc

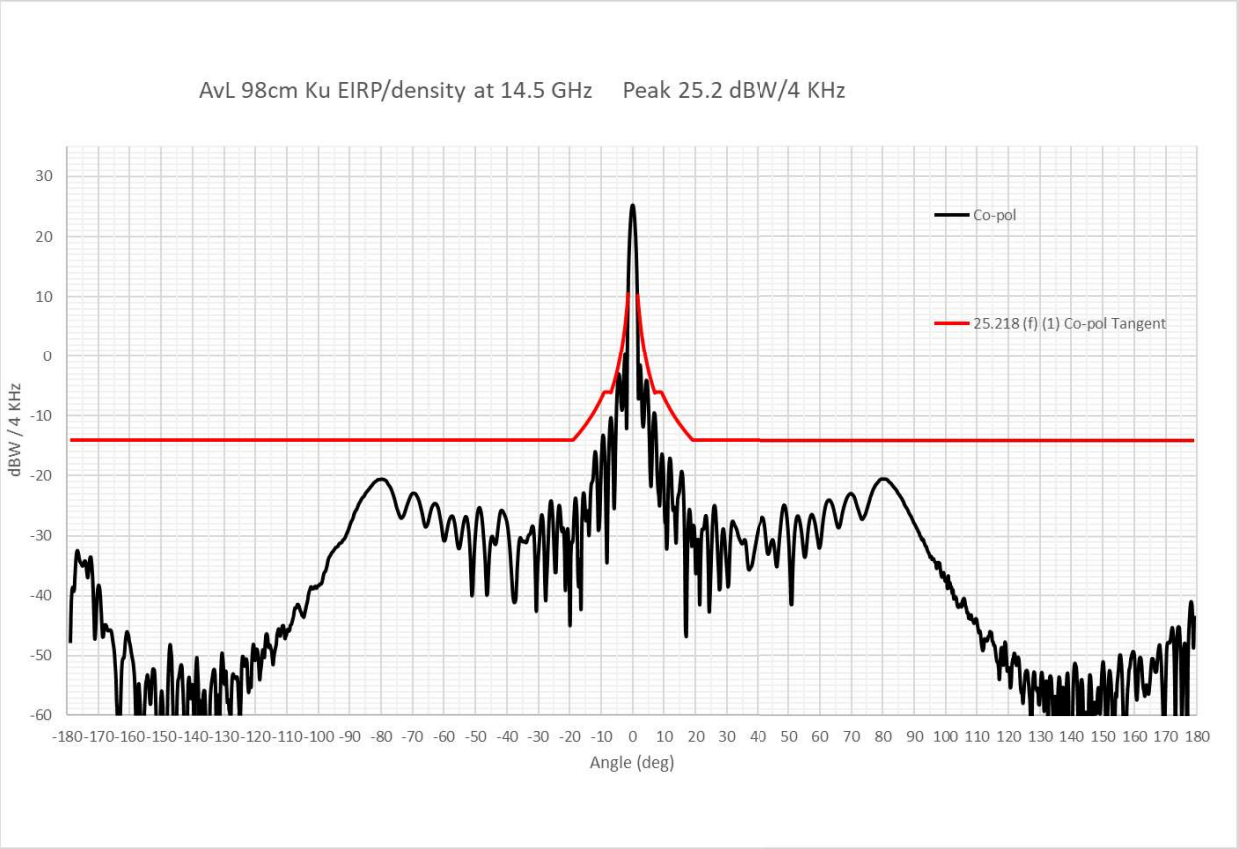


(iv-v) Cross--Pol EIRP density in the plane tangent and perpendicular to the GSO arc

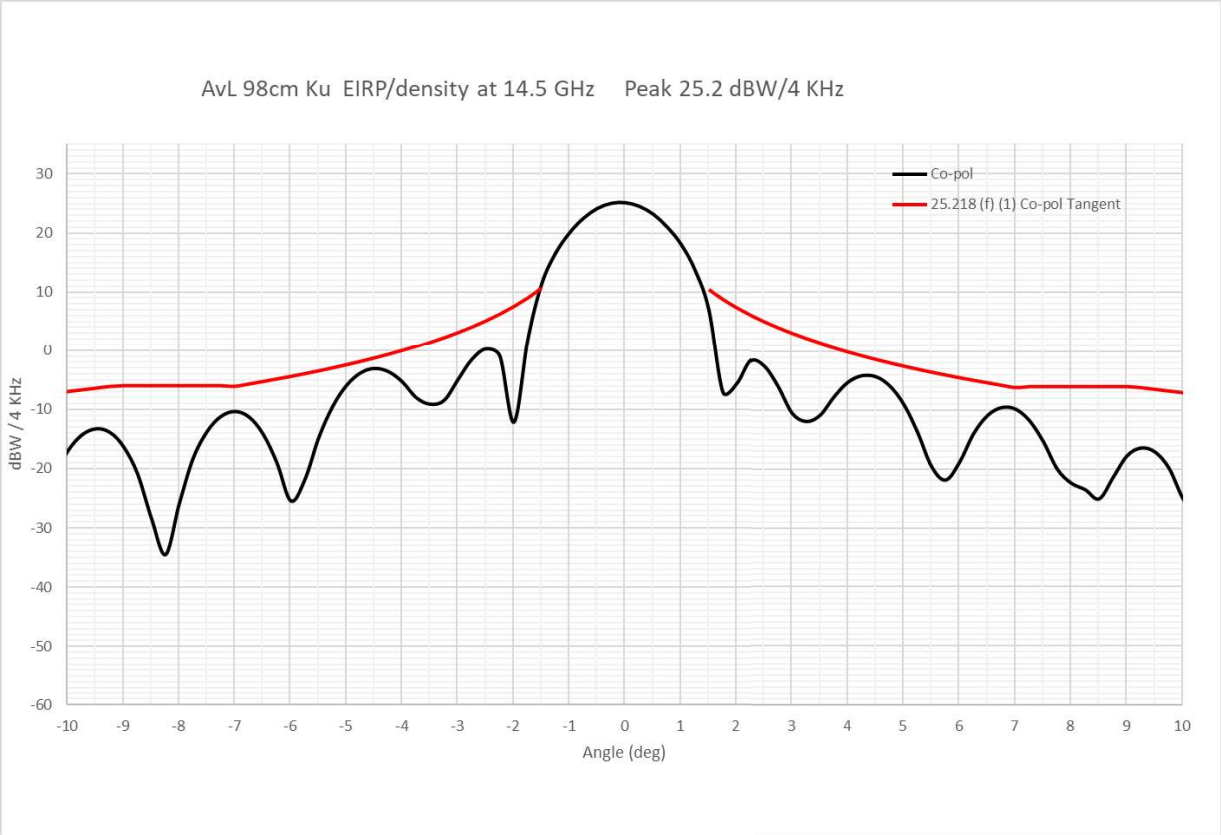


3. EIRP density plots (14.5 GHz, peak EIRP/density: 25.2 dBW/ 4KHz)

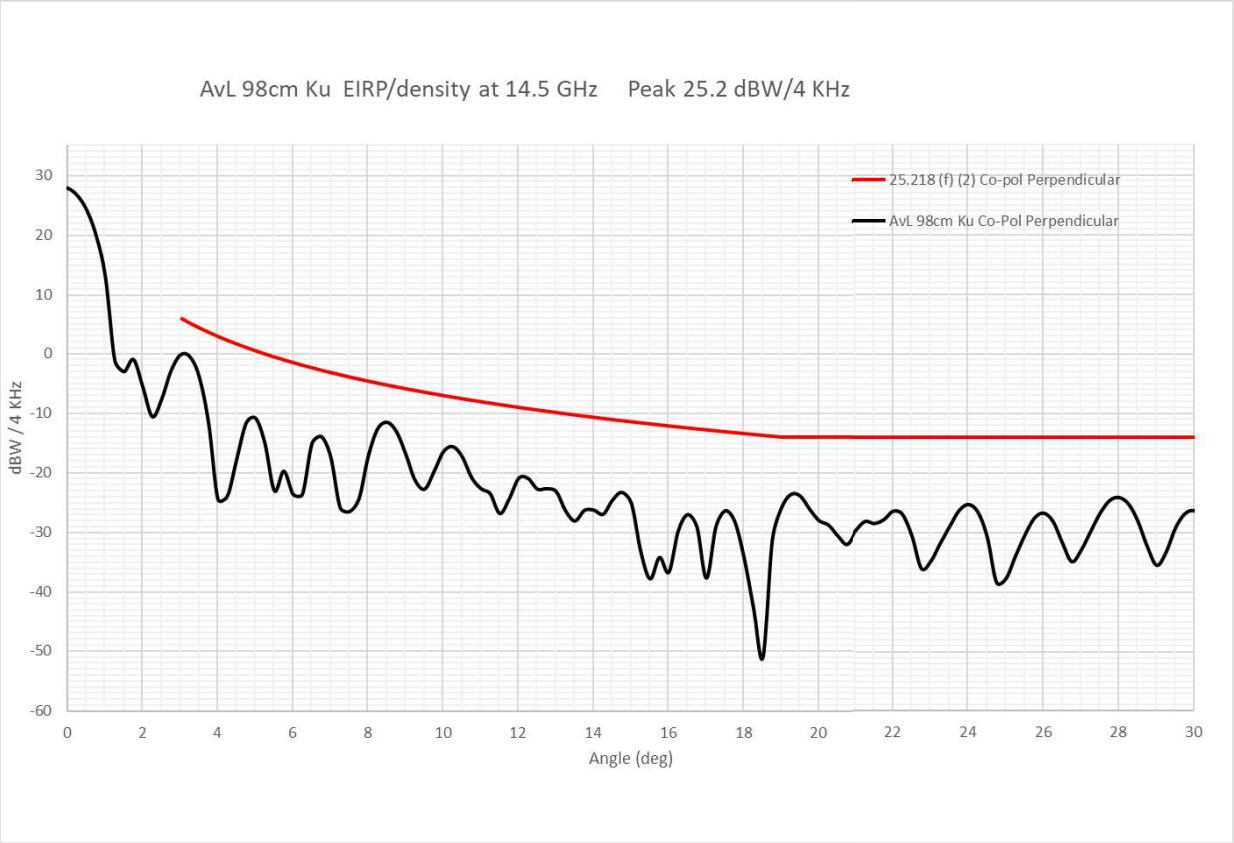
(i) Co-Pol EIRP density in the plane tangent to the GSO



(ii) Co-Pol EIRP density in the plane tangent to the GSO



(iii) Co-Pol EIRP density in the plane perpendicular to the GSO arc



(iv-v) Cross--Pol EIRP density in the plane tangent and perpendicular to the GSO arc

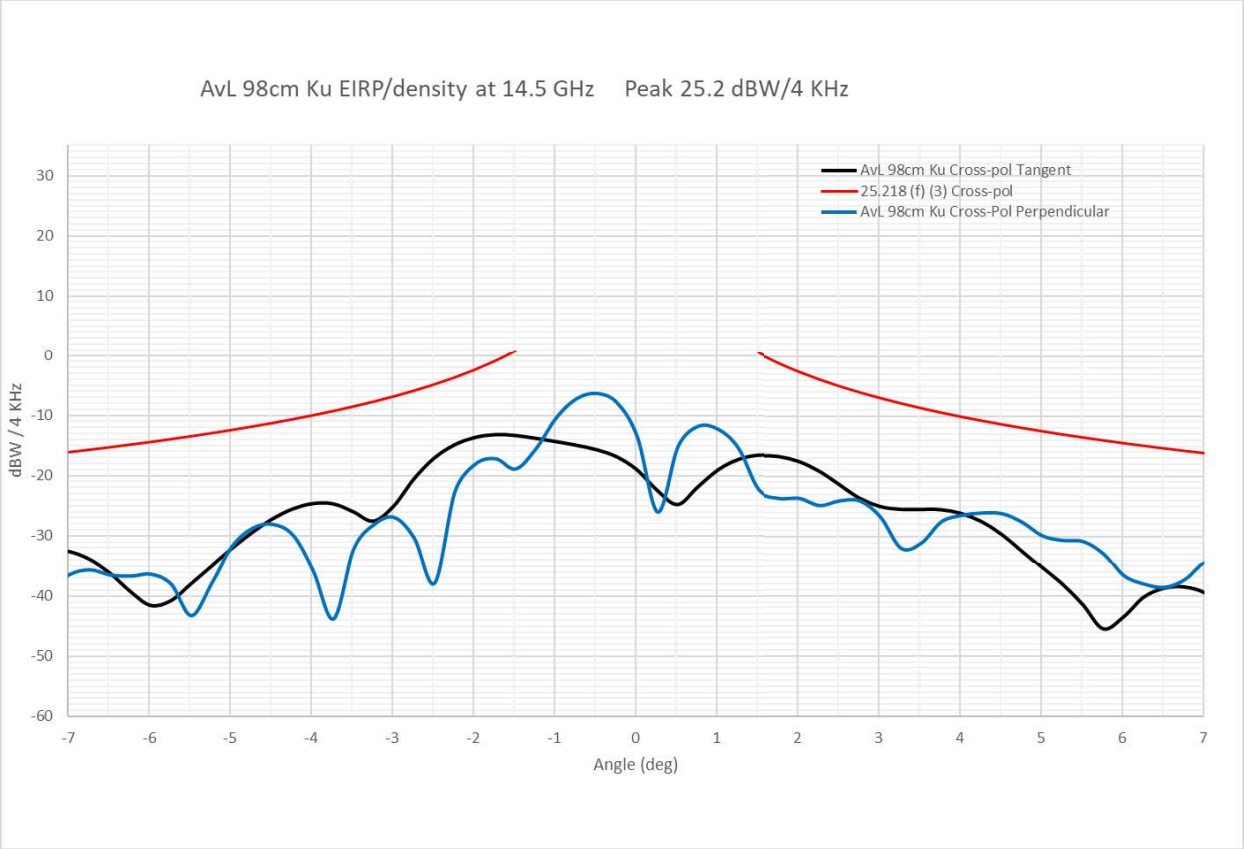


Exhibit B

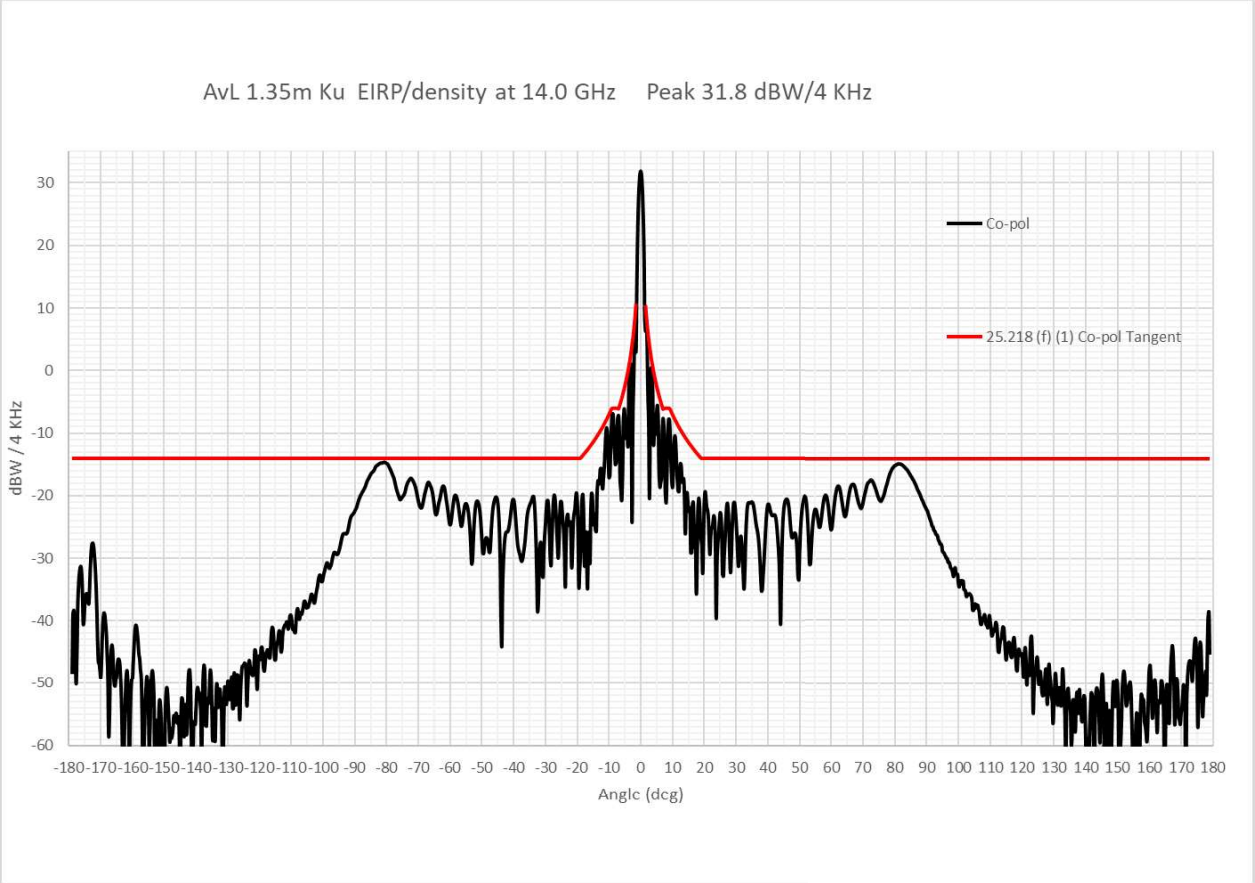
Maximum ESD for 135cm = 29.4 dBW/4KHz for 14.0 ~ 14.5GHz

EIRP SPECTRAL DENSITY FOR AvL Model 1315A 1.35m Terminal

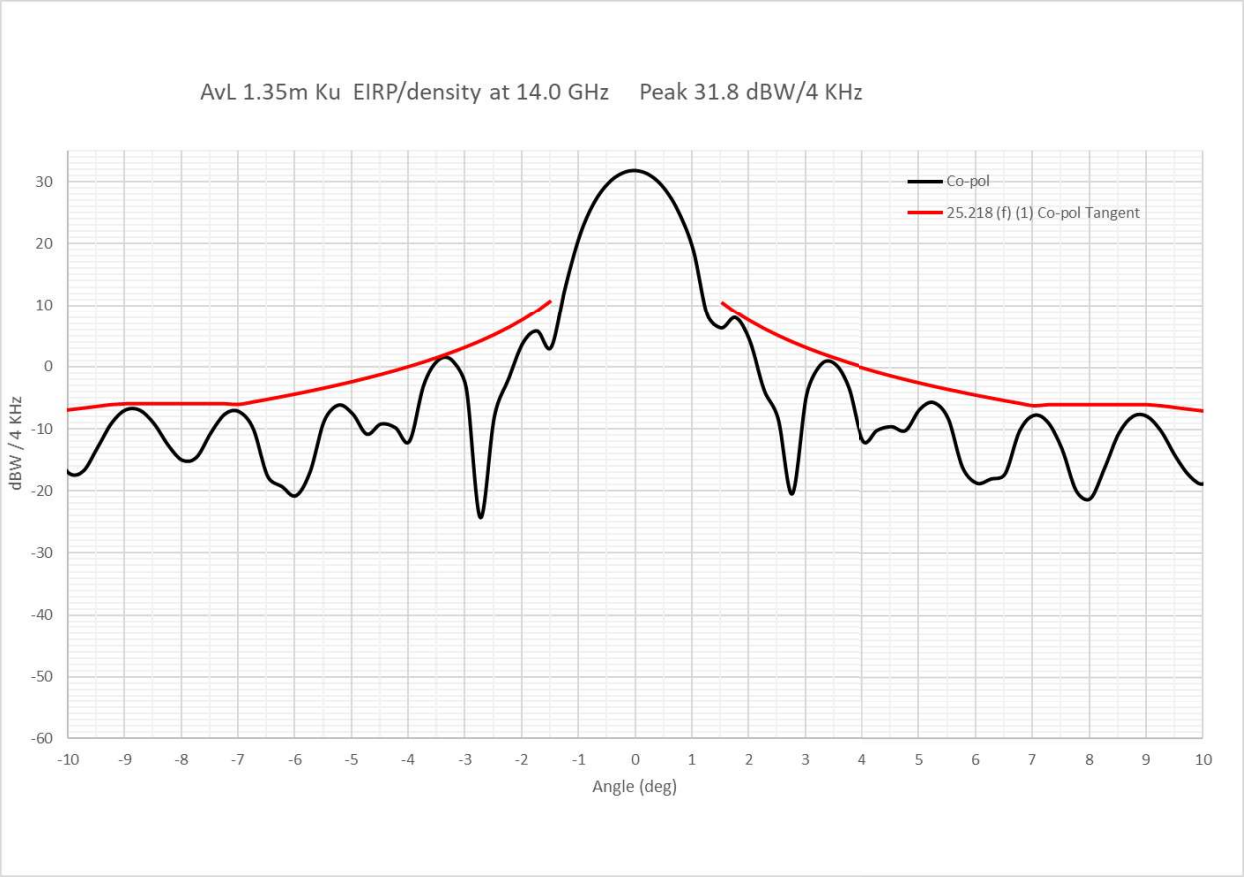
To ensure the EIRP spectral density envelopes specified in §25.218(f) 1-3 are satisfied, the maximum EIRP spectral density is limited to 30.4 dBW/4 kHz at 13.75 GHz. The EIRP density compliance for this terminal is shown below.

1. **EIRP density plots (Conventional Ku 14.0 GHz, peak EIRP/density: 31.8 dBW/ 4KHz)**

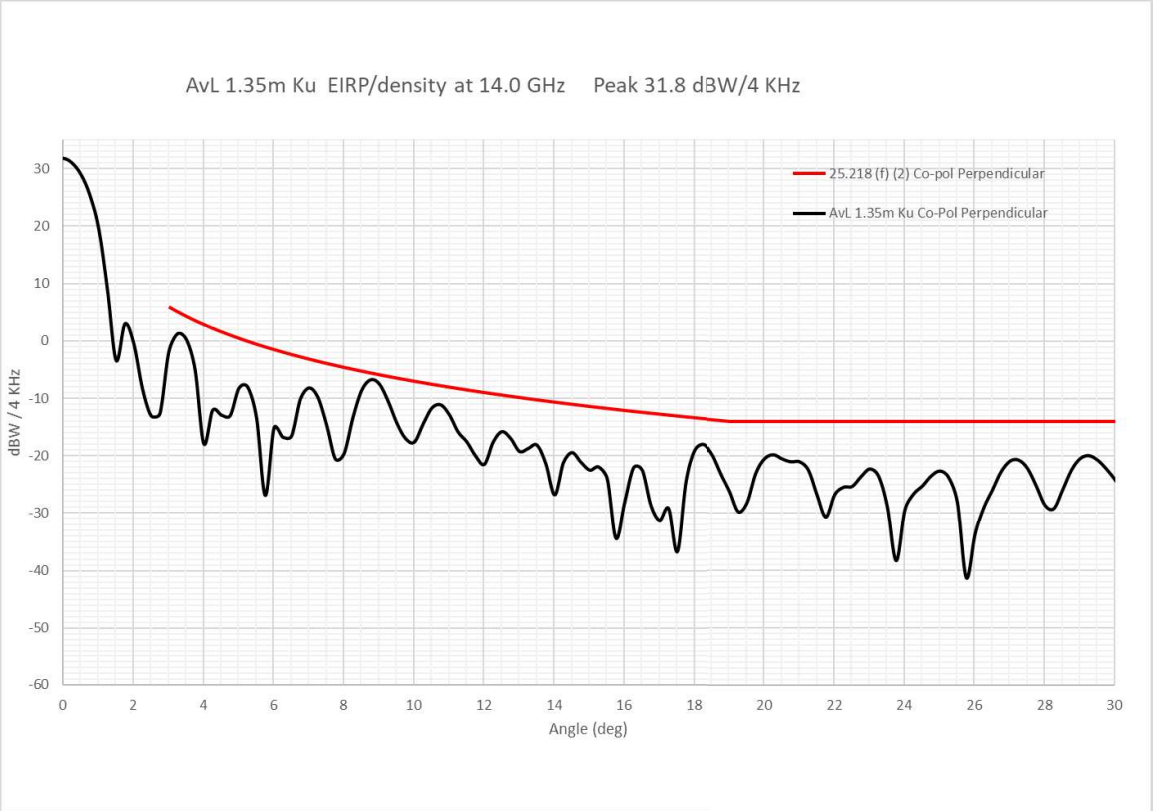
(i) Co-Pol EIRP density in the plane tangent to the GSO arc



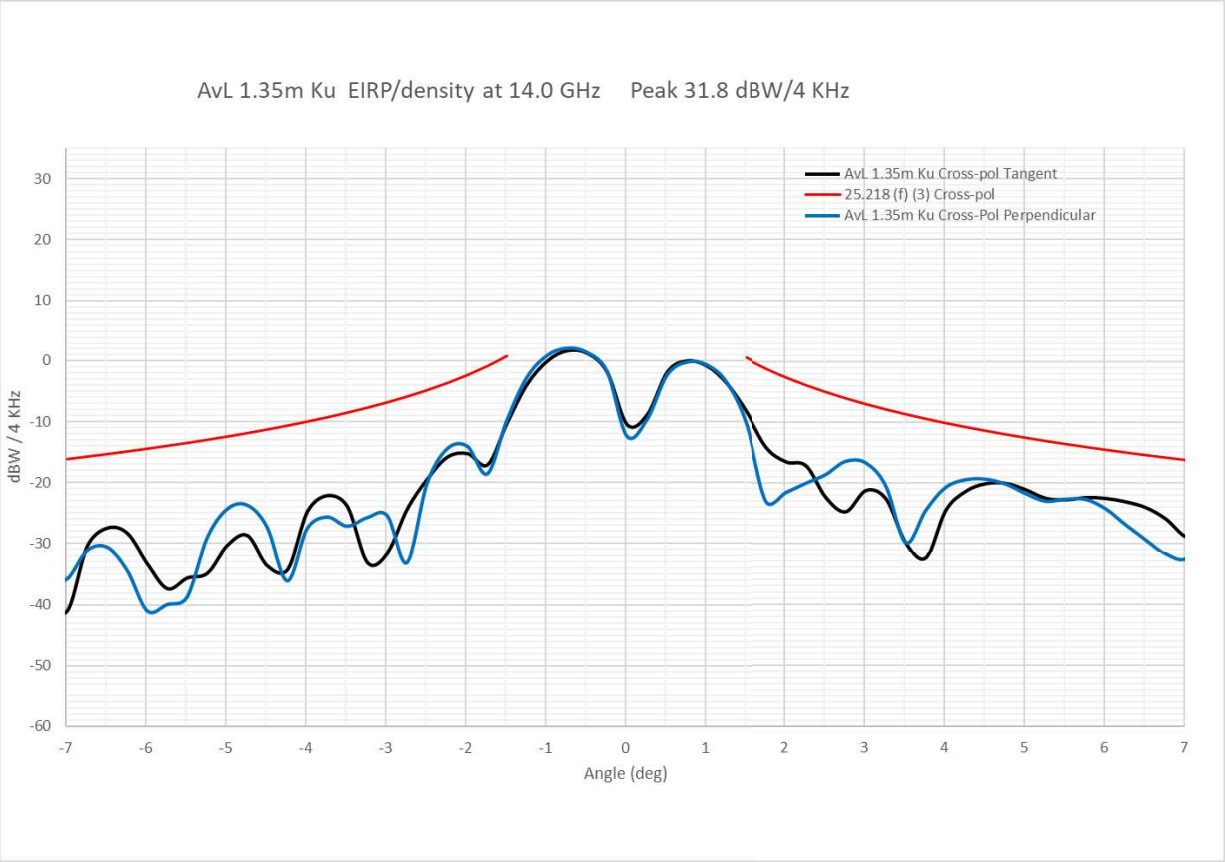
(ii) Co-Pol EIRP density in the plane tangent to the GSO arc



(iii) Co-Pol EIRP density in the plane perpendicular to the GSO arc

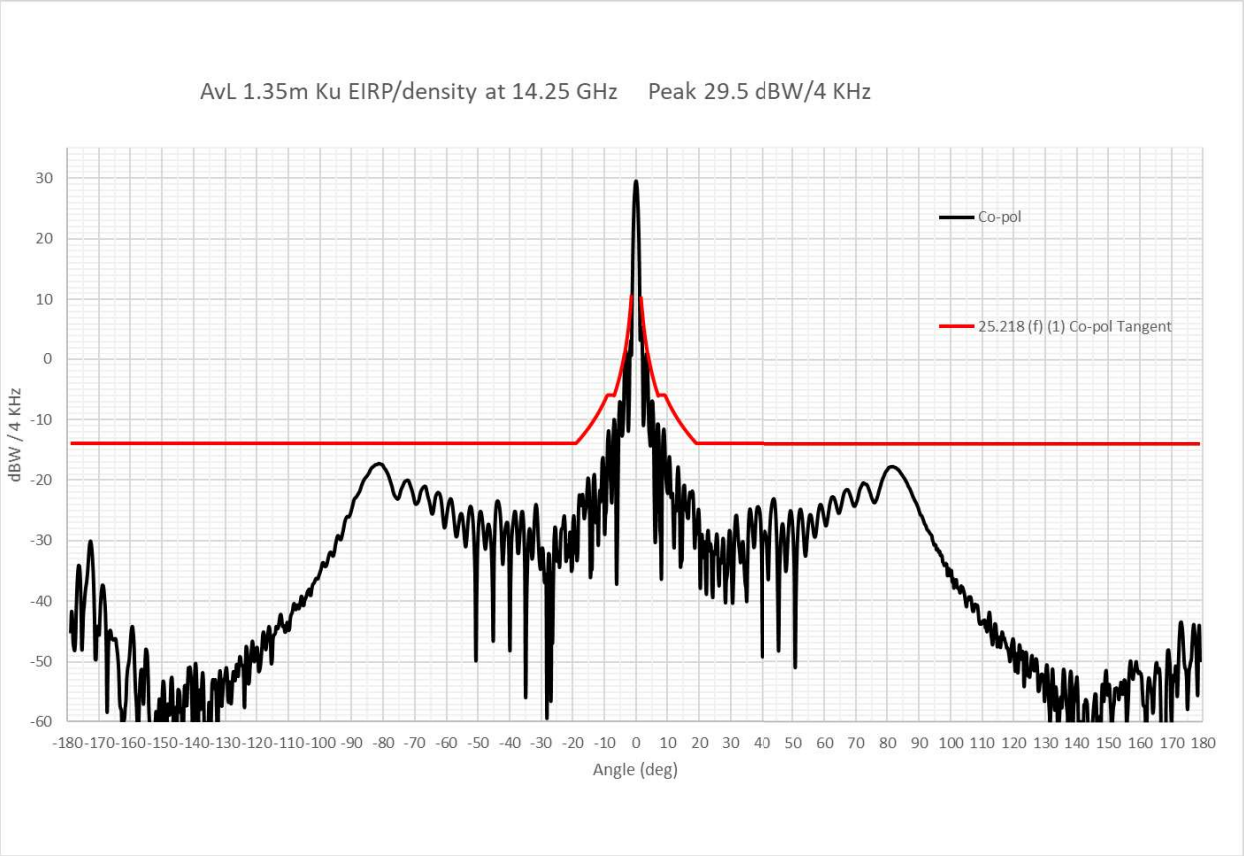


(iv-v) Cross-Pol EIRP density in the plane tangent and perpendicular to the GSO arc

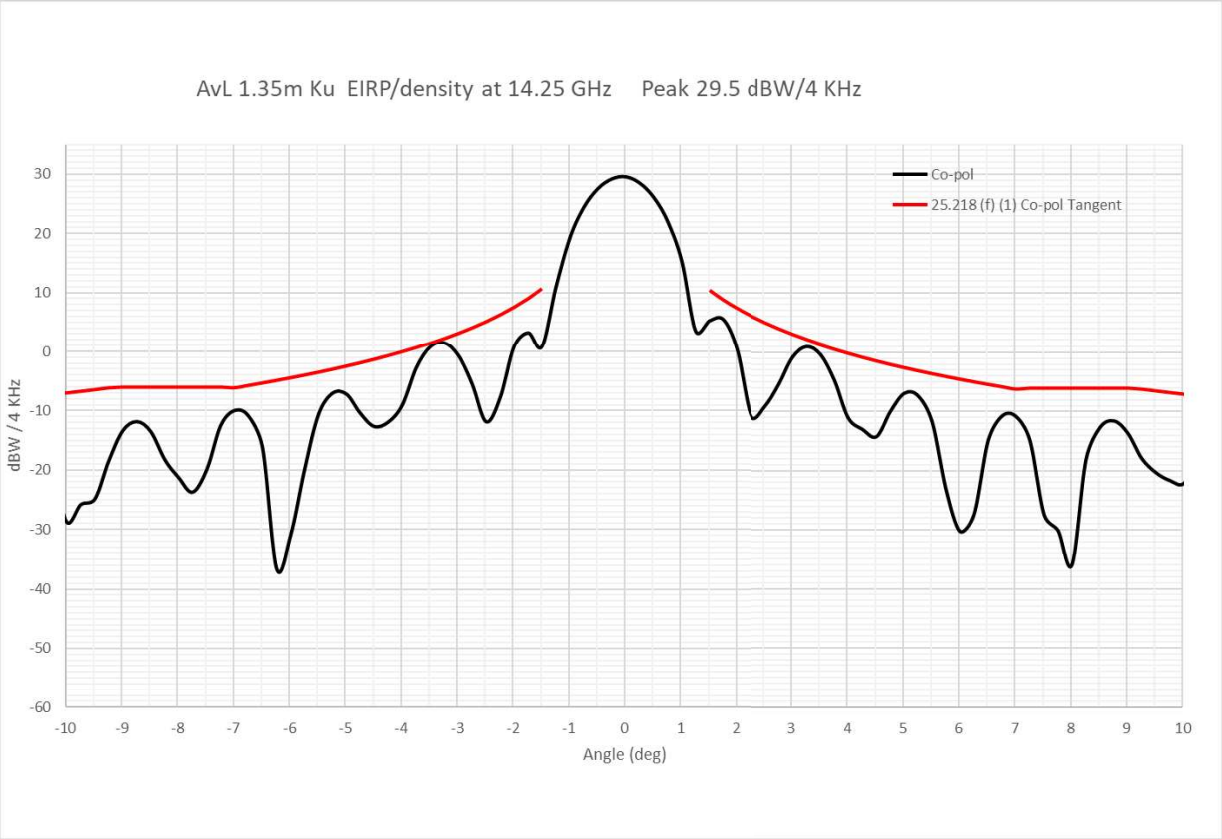


2. EIRP density plots (14.25 GHz, peak EIRP/density: 29.5 dBW/ 4KHz)

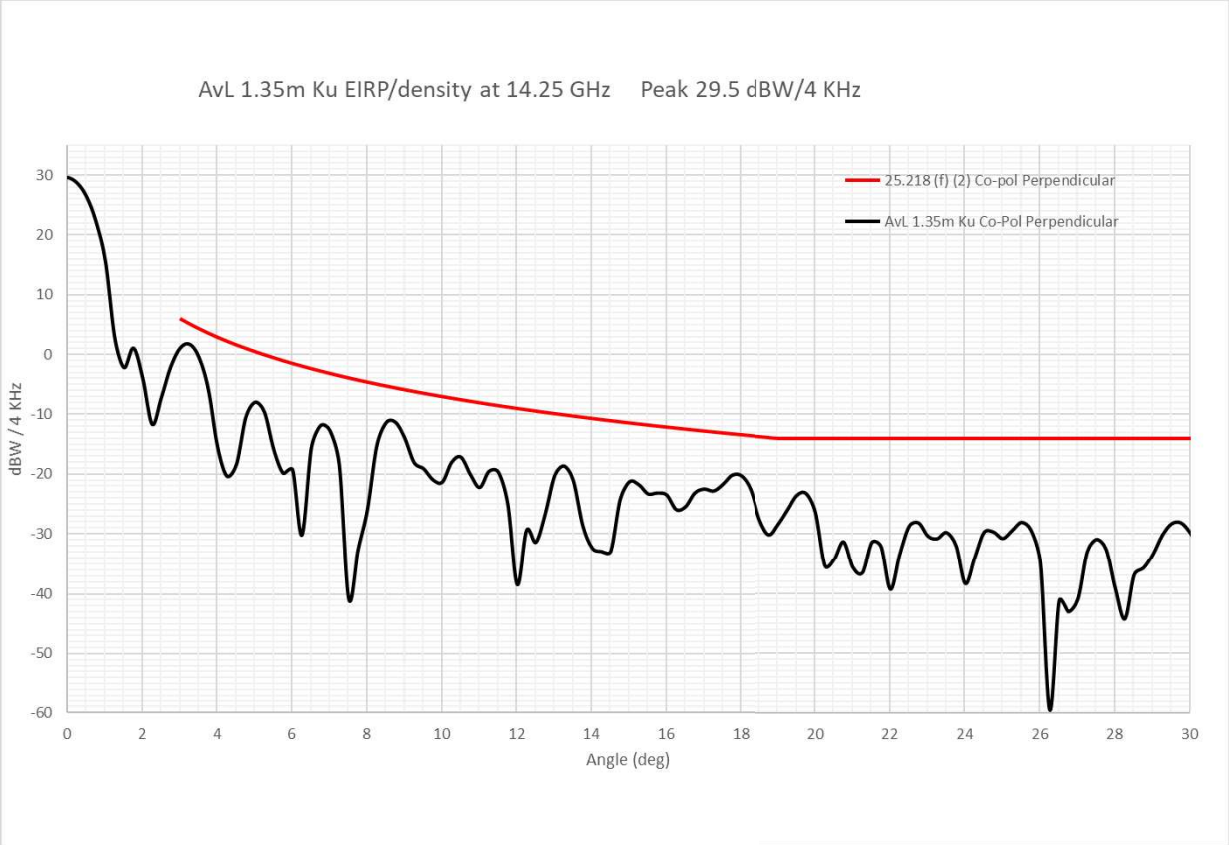
(i) Co-Pol EIRP density in the plane tangent to the GSO arc



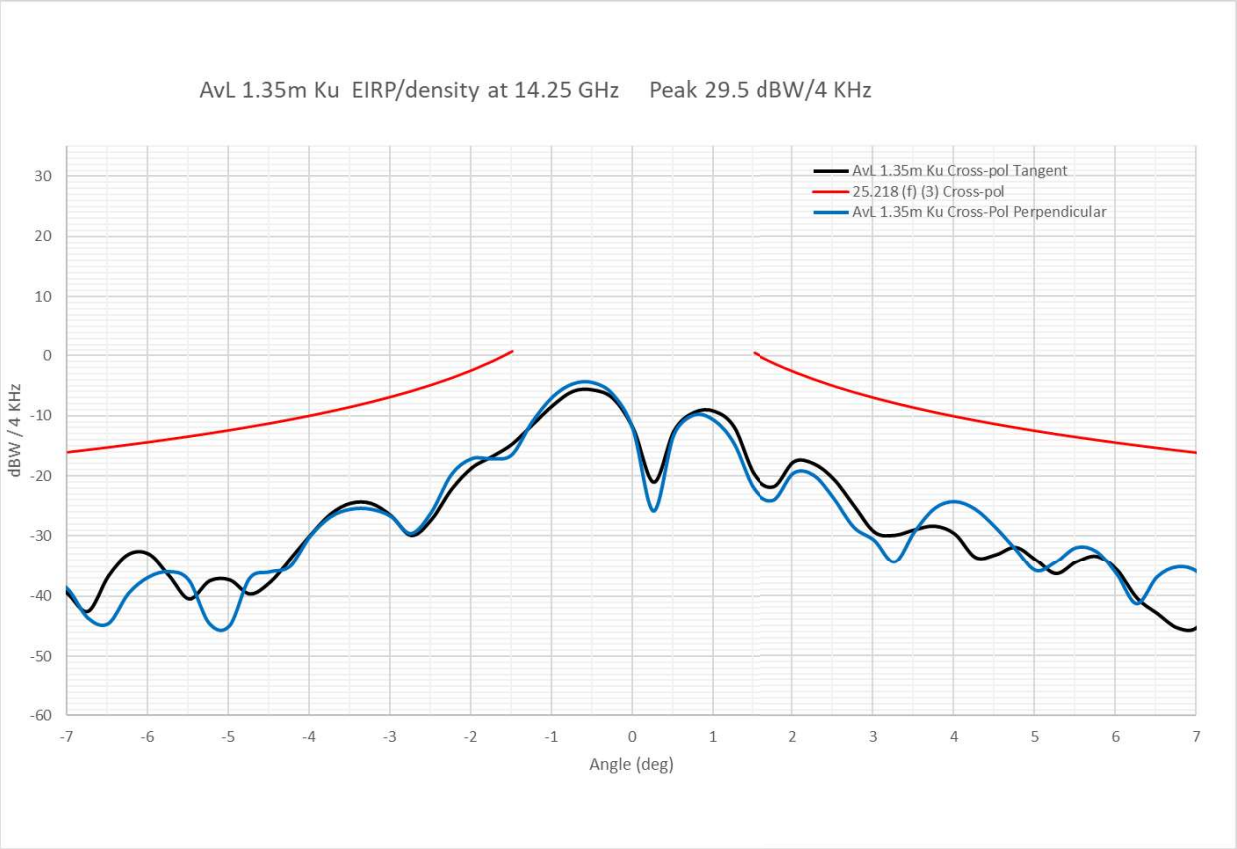
(ii) Co-Pol EIRP density in the plane tangent to the GSO arc



(iii) Co-Pol EIRP density in the plane perpendicular to the GSO arc

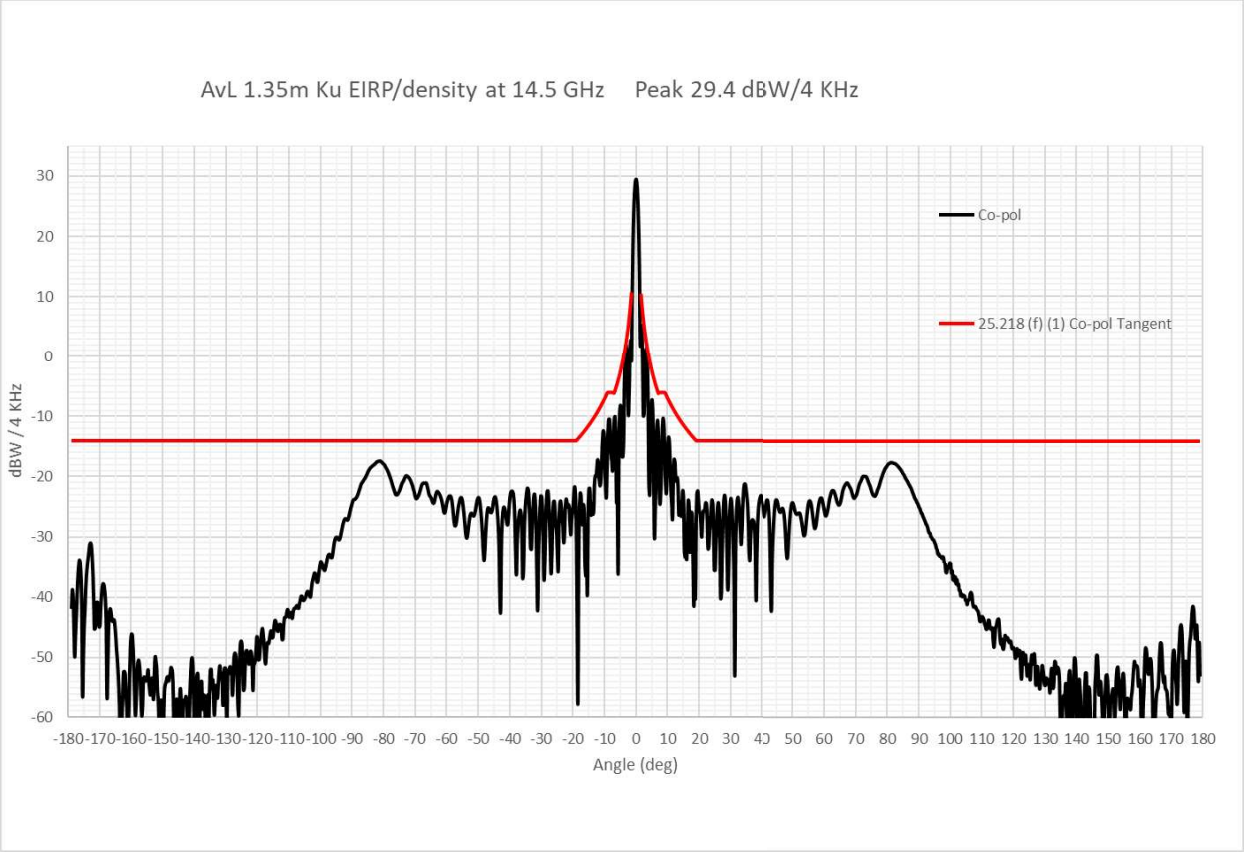


(iv-v) Cross--Pol EIRP density in the plane tangent and perpendicular to the GSO arc

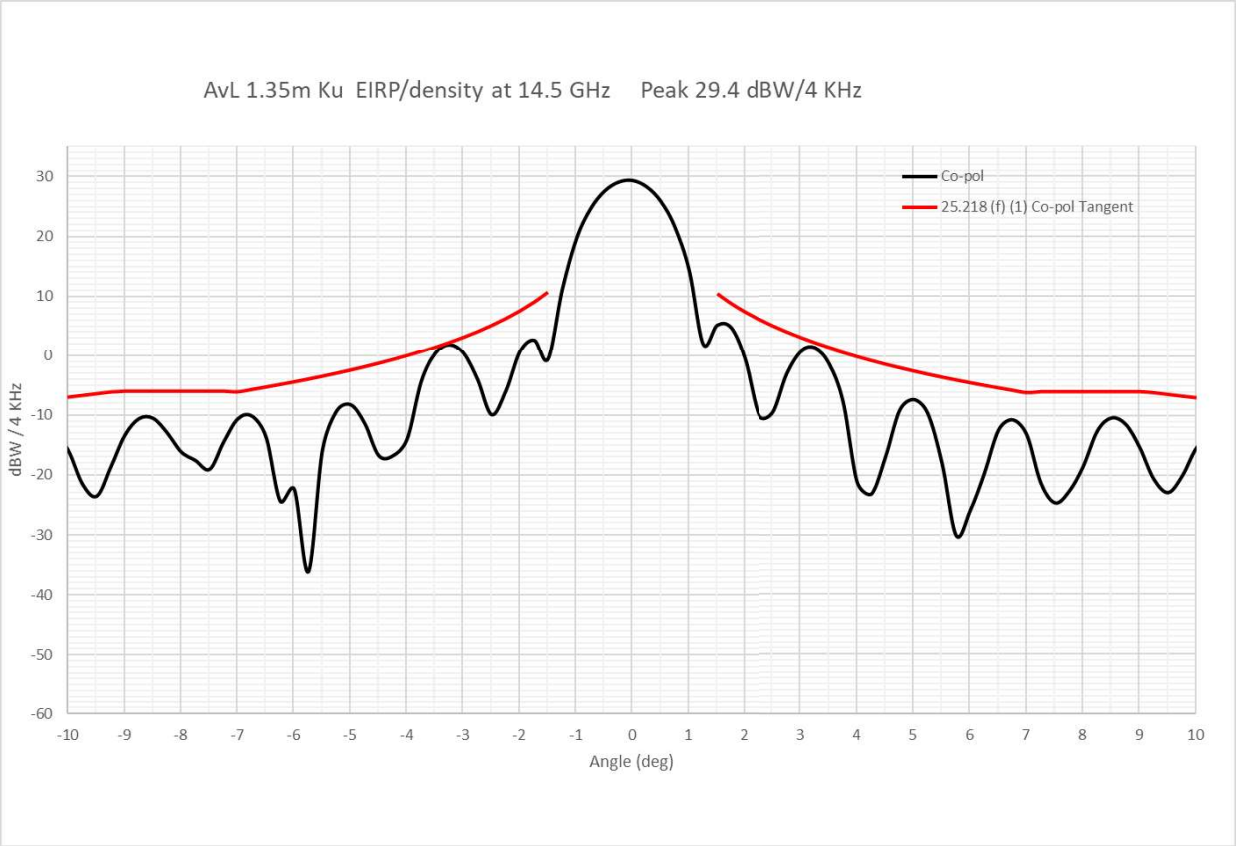


3. EIRP density plots (14.5 GHz, peak EIRP/density: 29.4 dBW/ 4KHz)

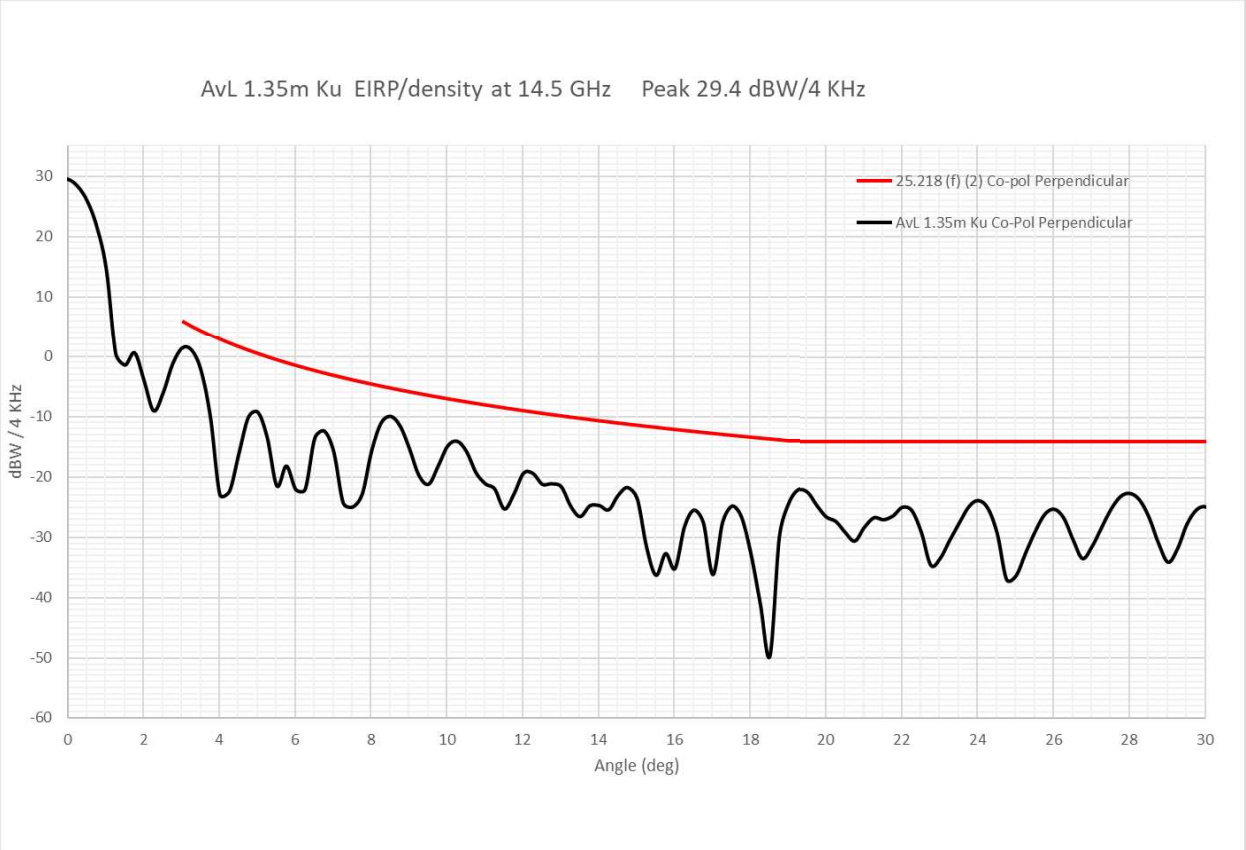
(i) Co-Pol EIRP density in the plane tangent to the GSO arc



(ii) Co-Pol EIRP density in the plane tangent to the GSO



(iii) **Co-Pol EIRP density in the plane perpendicular to the GSO arc**



(iv)

(iv-v) Cross-Pol EIRP density in the plane tangent and perpendicular to the GSO arc

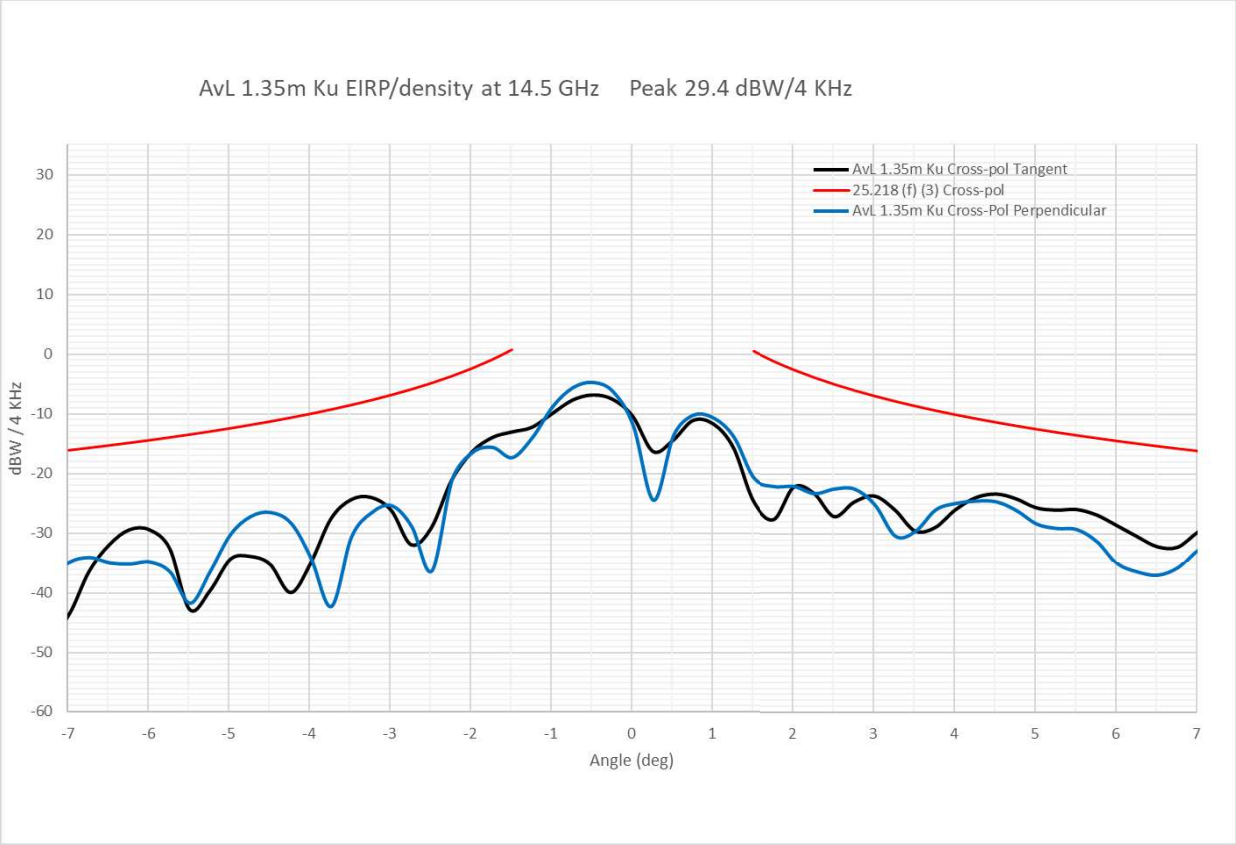
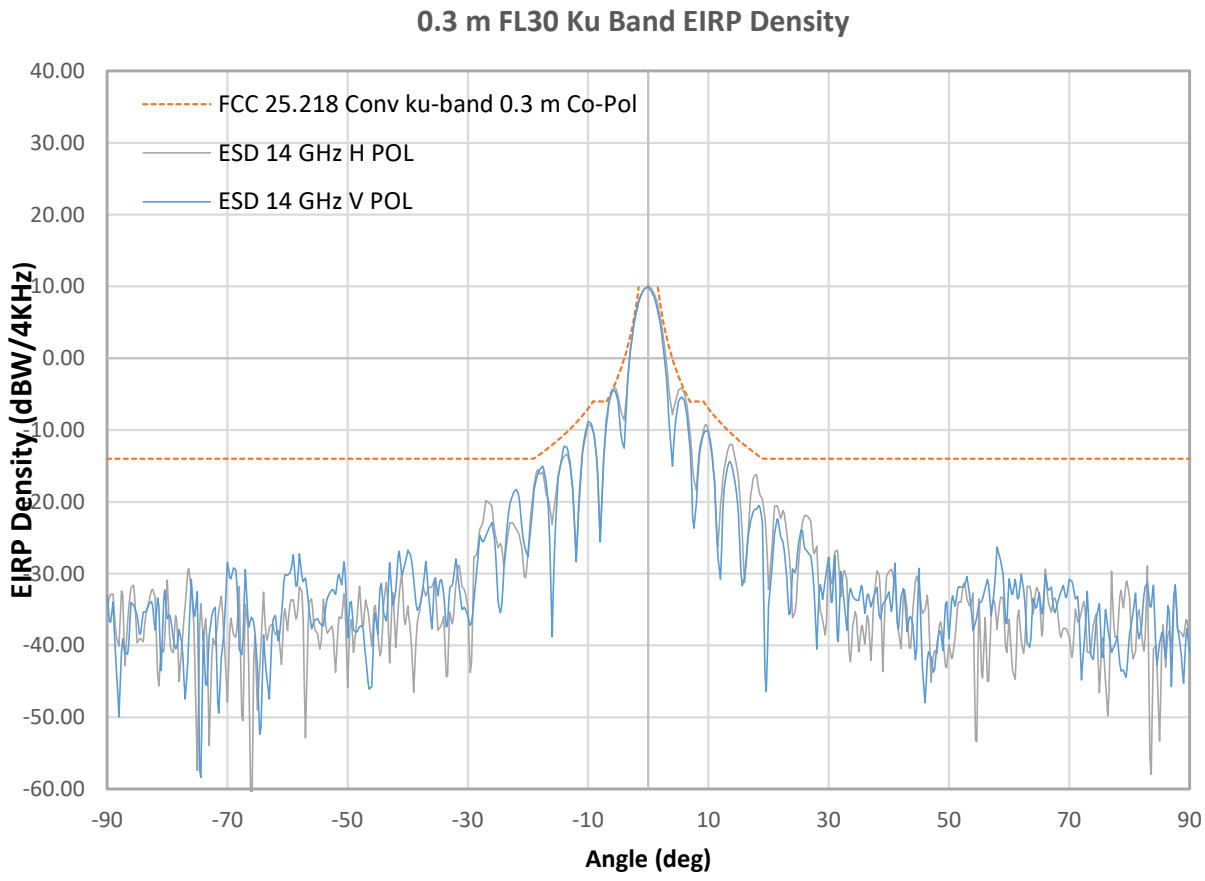


Exhibit B

Starwin, the manufacturer of the 0.3 m FL30P KU band antenna, has confirmed that these antennas do not conform to the FCC 25.209 side-lobe standard due to the broad nature of their main beam, which is a characteristic of all antennas in this size category, instead, these antennas, as demonstrated below, are in compliance with the requirement of FCC 25.218.

Below, are the off-axis EIRP density patterns for the 0.3 m Ku-Band antenna. These patterns show compliance with FCC 25.218 as shown below.

1. **EIRP density plots (14.0 GHz, peak EIRP/density: 10 dBW/ 4KHz)**



2. EIRP density plots (14.5 GHz, peak EIRP/density: 10.2 dBW/ 4KHz)

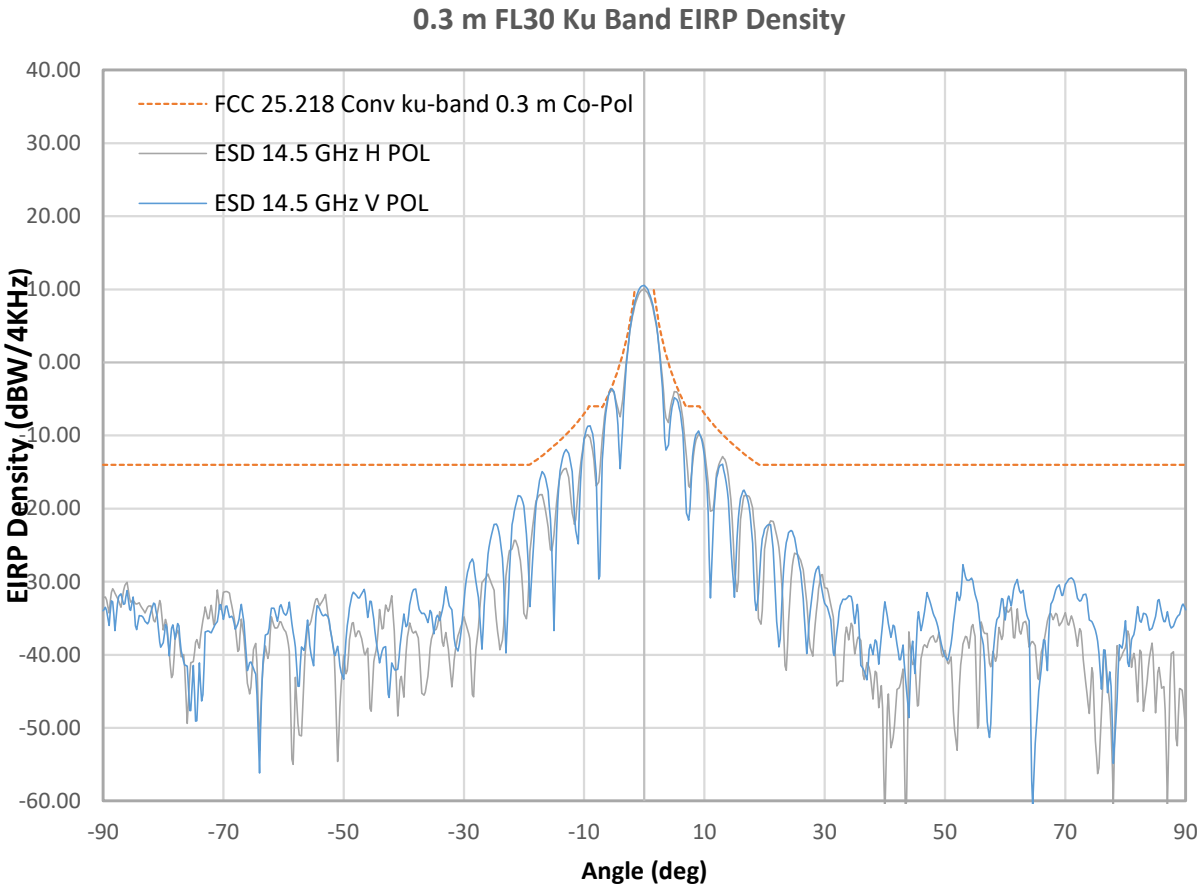
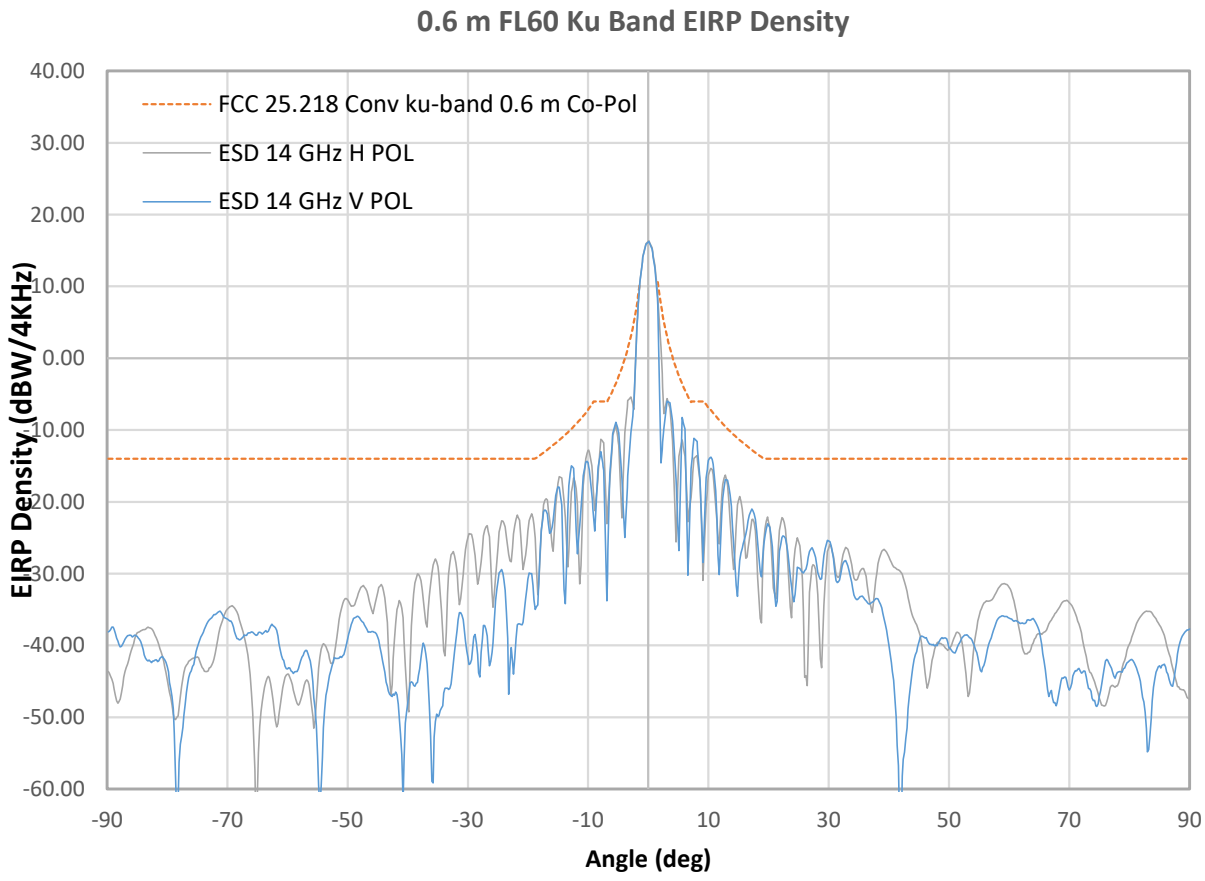


Exhibit B

Starwin, the manufacturer of the 0.6 m FL60 KU band antenna, has confirmed that these antennas do not conform to the FCC 25.209 side-lobe standard due to the broad nature of their main beam, which is a characteristic of all antennas in this size category, instead, these antennas, as demonstrated below, are in compliance with the requirement of FCC 25.218.

Below, are the off-axis EIRP density patterns for the 0.6 m Ku-Band antenna. These patterns show compliance with FCC 25.218 as shown below.

1. **EIRP density plots (14.0 GHz, peak EIRP/density: 16.2 dBW/ 4KHz)**



2. EIRP density plots (14.5 GHz, peak EIRP/density: 17.9 dBW/ 4KHz)

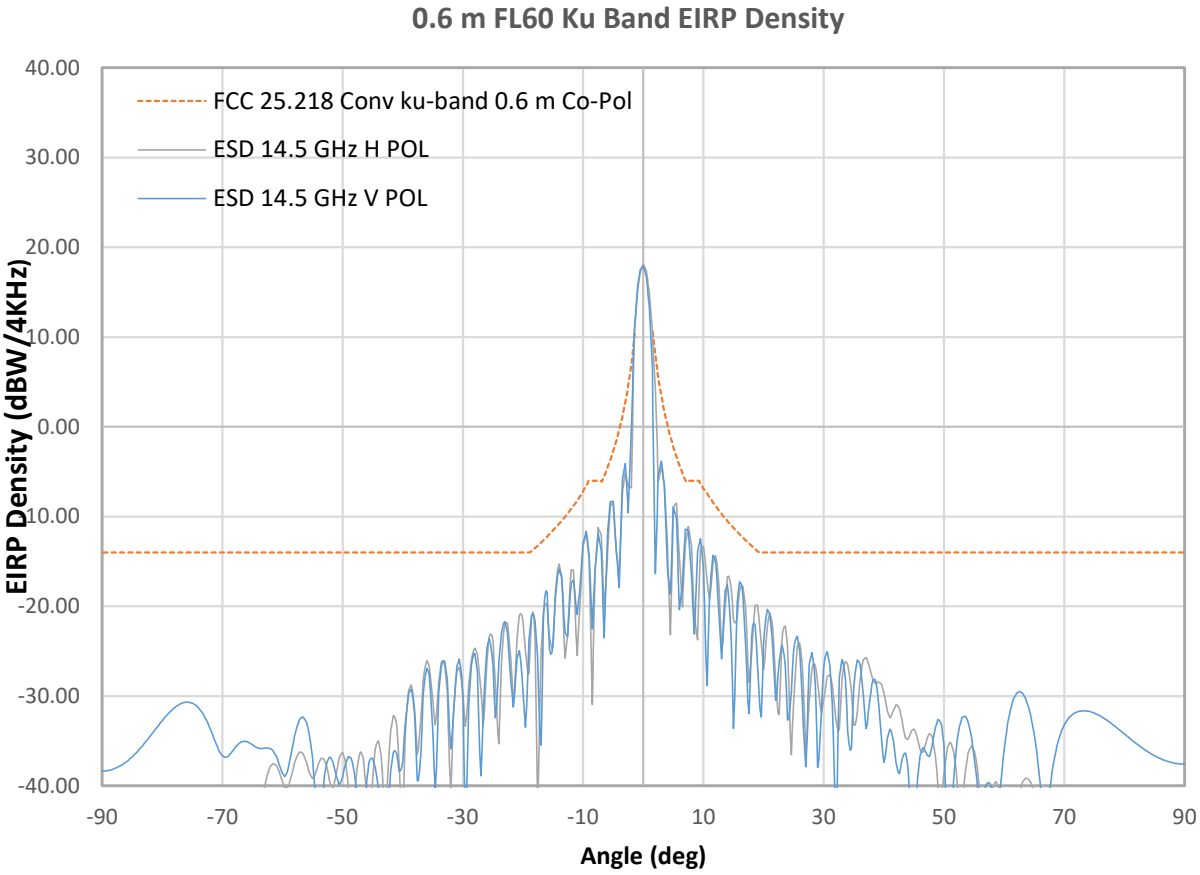
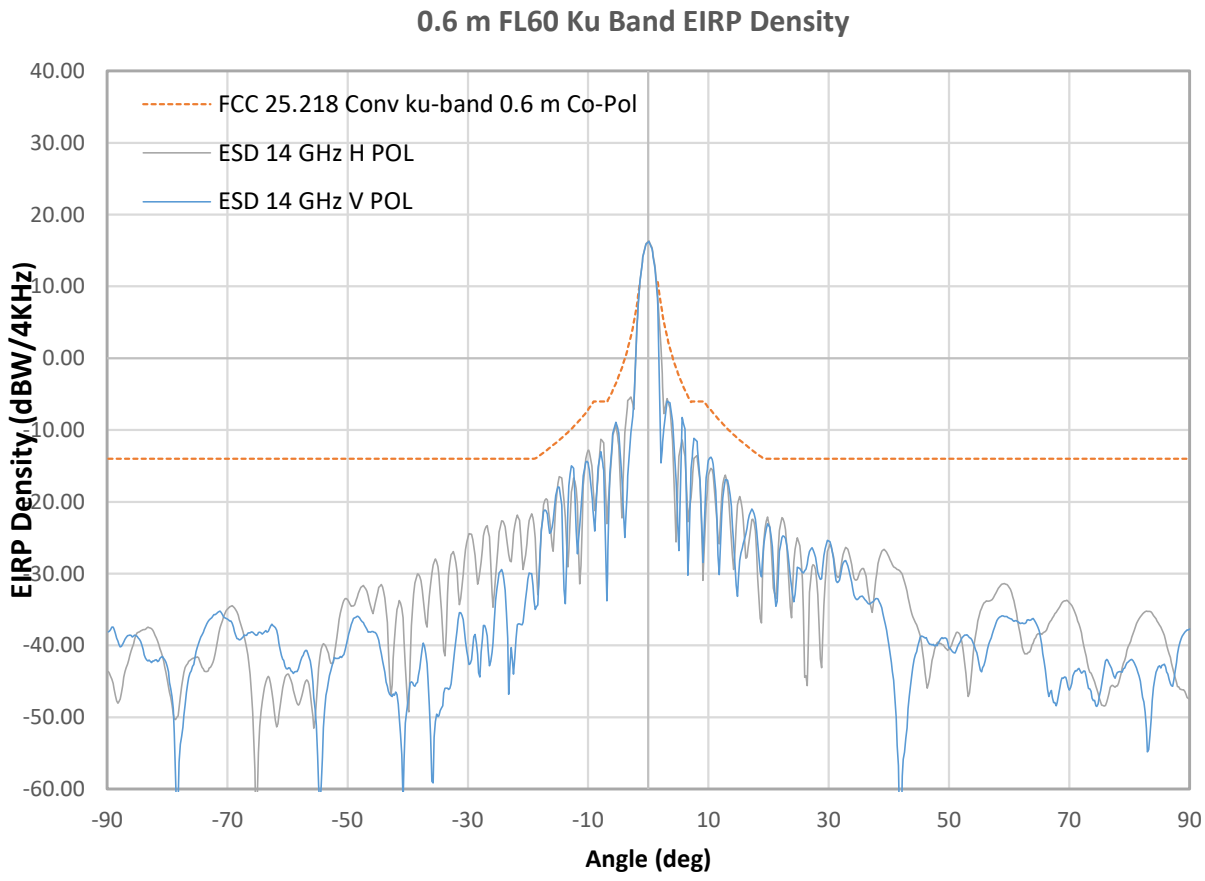


Exhibit B

Starwin, the manufacturer of the 0.6 m FL60 KU band antenna, has confirmed that these antennas do not conform to the FCC 25.209 side-lobe standard due to the broad nature of their main beam, which is a characteristic of all antennas in this size category, instead, these antennas, as demonstrated below, are in compliance with the requirement of FCC 25.218.

Below, are the off-axis EIRP density patterns for the 0.6 m Ku-Band antenna. These patterns show compliance with FCC 25.218 as shown below.

1. **EIRP density plots (14.0 GHz, peak EIRP/density: 16.2 dBW/ 4KHz)**



2. EIRP density plots (14.5 GHz, peak EIRP/density: 17.9 dBW/ 4KHz)

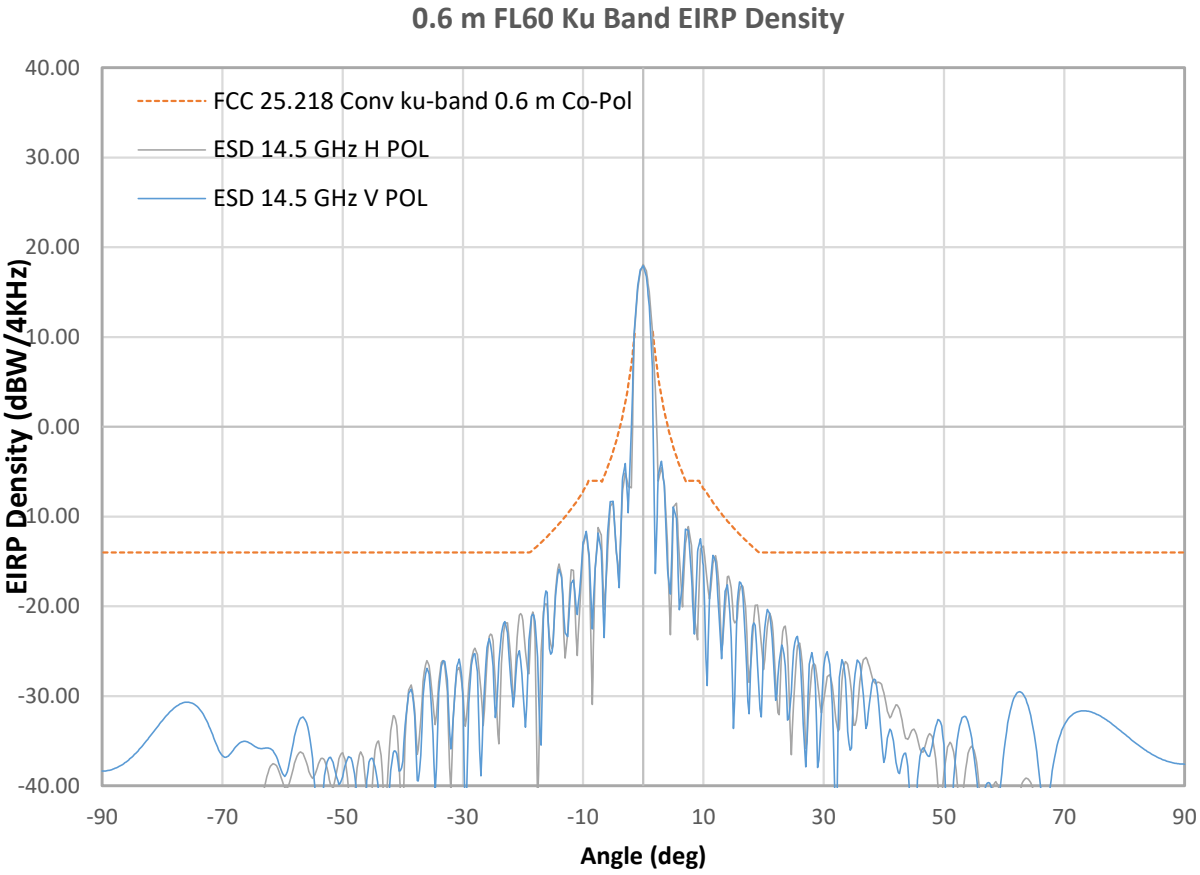
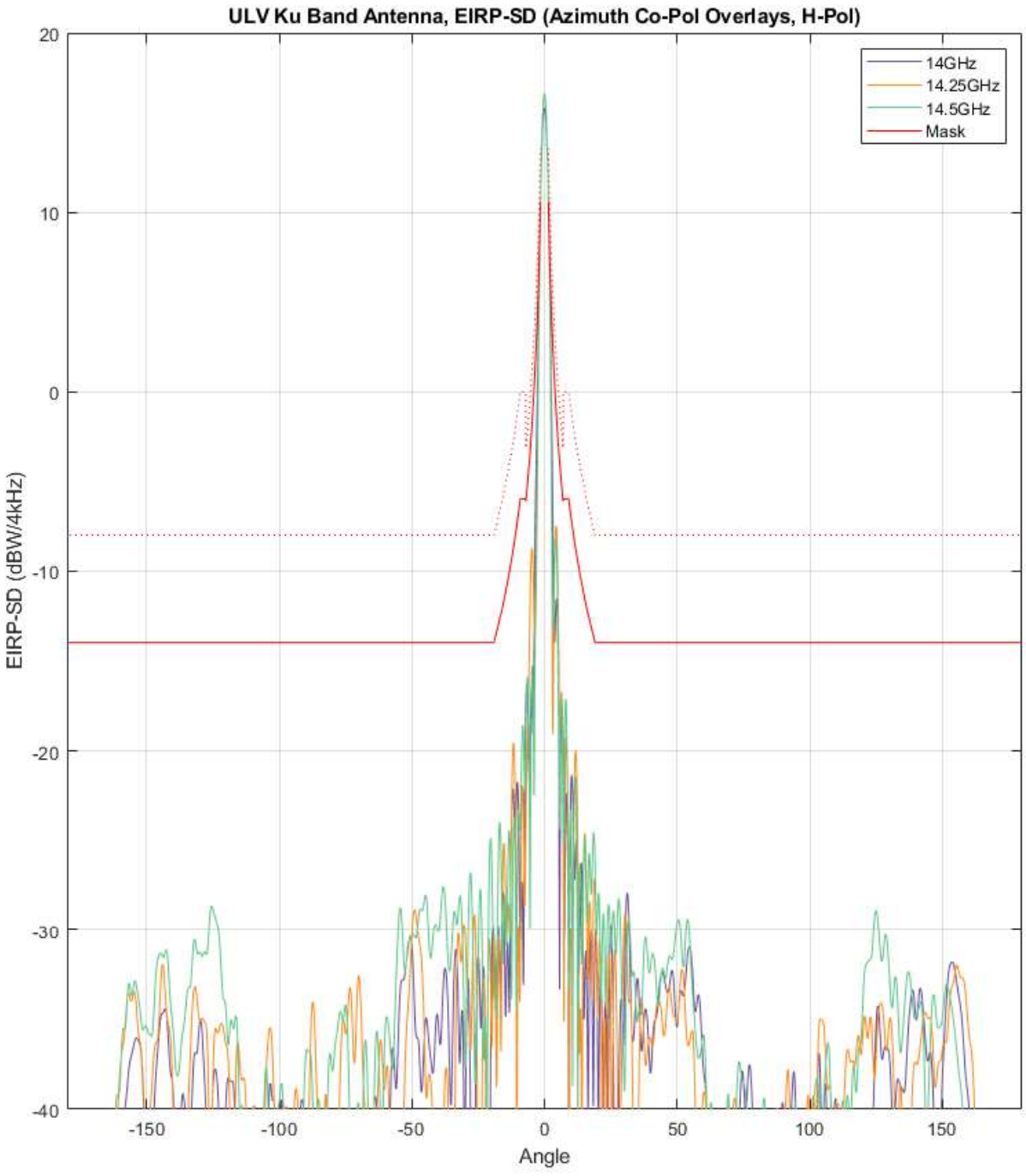


Exhibit B

Gigasat, the manufacturer of the 0.6 m ULV KU band antenna, has confirmed that these antennas do not conform to the FCC 25.209 side-lobe standard due to the broad nature of their main beam, which is a characteristic of all antennas in this size category, instead, these antennas, as demonstrated below, are in compliance with the requirement of FCC 25.218.

Below, are the off-axis EIRP density patterns for the 0.6 m Ku-Band antenna. These patterns show compliance with FCC 25.218 as shown below.

1. **EIRP density plots V-Pol Co-Polar Plot Overlays (14.5 GHz, peak EIRP/density: 17.2 dBW/ 4KHz)**


ULV Ku Band Antenna, EIRP-SD (Azimuth Co-Pol Overlays, H-Pol)
14GHz
14.25GHz
14.5GHz
Mask
EIRP-SD (dBW/4kHz)
Angle
20
10
0
-10
-20
-30
-40
-150
-100
-50
0
50
100
150

2. EIRP density plots V-Pol Co-Polar Plot Overlays (14.5 GHz, peak EIRP/density: 17.5 dBW/ 4KHz)