

From: John Springmann

To: Leann Nguyen

Date: January 12, 2018

Subject: Request for Info - File # 0864-EX-CN-2017

Message:

Ms. Nguyen:

You asked if we would provide what types of antenna use for UHF downlink and X band downlink.

The UHF downlink antenna is a $\frac{1}{4}$ -wave monopole antenna.

The X-band downlink antenna is a patch antenna. The half power beamwidth of this patch antenna is 16 x 30 degrees full width.

John Springmann