

Exhibit 1
FCC Form 442
Item 4a-g

Although the band 5-20 GHz was requested, this experiment requires only 1 or 2 frequencies per GHz, (5-6, 6-7, 7-8, etc.) spaced somewhat evenly across the entire band. This large range of frequencies is necessary to evaluate the antenna across its entire operating band. The transmitter uses a multiple-element, electronically scanned, phased array antenna.

The 8 MW output level is required only for a limited amount (>10%) of test time to establish the transmitter's sustained high-power performance. The balance of testing will require an ERP of 2 kW. The power will be reduced by changing the PRF from 10 kHz to 250 Hz.

The bandwidth was determined using the formula $B_n = 1.79 / (\sqrt{t_r} t)$, where $t_r = 100$ nS and $t = 1$ μ S.

Exhibit 2
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Item 7

Northrop Grumman Corporation's Electronic Sensors & Systems Division (ESSD) has been under Naval Research Laboratory (NRL) contract N00014-96-C-2016 to develop an Advanced Technology Demonstration (ATD) transmitter and antenna for shipboard use. This ATD transmitter will allow the insertion of emerging technology into other Navy advanced systems. The ATD transmitter will demonstrate the enhanced performance necessary for ship requirements in the next century.

It is anticipated that beginning in January 1998, ESSD will begin antenna system functional performance testing at their outdoor antenna range facility. This testing is essential to verify the operational effectiveness of the ATD Transmitter prior to acceptance by NRL and subsequent delivery for further Navy evaluation. The ECM Transmitter will be operated at ESSD for approximately 20 hours per week.

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