Corinth AWACS Support Facility and Antenna Range
Corinth, TX

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by

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Why a License is Necessary

A license is being requested because the 0448-EX-ST-2004 - WB9XYM STA is about to expire and more time is needed to develop test procedures.

Purpose of Operation

The activity is to support the Boeing AWACS program. The E-3 Airborne Warning and Control System (AWACS) facility is an open-air antenna range located in Corinth, Texas. This antenna range will later be used to test and characterize the antennas and associated receivers of the ESM System used in the AWACS Program. A subsequent application for an Experimental License will be requested when the test parameters and procedures have been determined. A license is needed from January 29, 2005 to December 31, 2005.

Corinth AWACS Support Facility ESM Military Contracts

The following are DD254's that are active in support of the ESM program.

1 CADR 01-201-1ES (USAF)
2 F19628-00-C-0004 (USAF)
3 F19628-01-D-0016 (USAF)
4 F19628-87-C-0004 (USAF)
5 F19628-94-C-0089 (USAF)
6 F34601-99-C-0344 (USAF)
7 F09603-01-D-0213 SD11 (USAF)

8 F19628-87-C-0030 (USAF)
9 BC.RE.99.001.0 (FRANCE)
10 BOA C8018 (NATO)

No proprietary or classified programs/contracts are connected with work done in Building 91-303 at the Corinth facility.

Operational Detail

Refer to Exhibit 1. This is a diagram of the facility and the surrounding area. The address of the facility is:

THE BOEING COMPANY
BGRC-Corinth
7801 S. Stemmons Freeway Suite 200
Corinth, TX 76210-1841

The ground elevation is 573 feet.

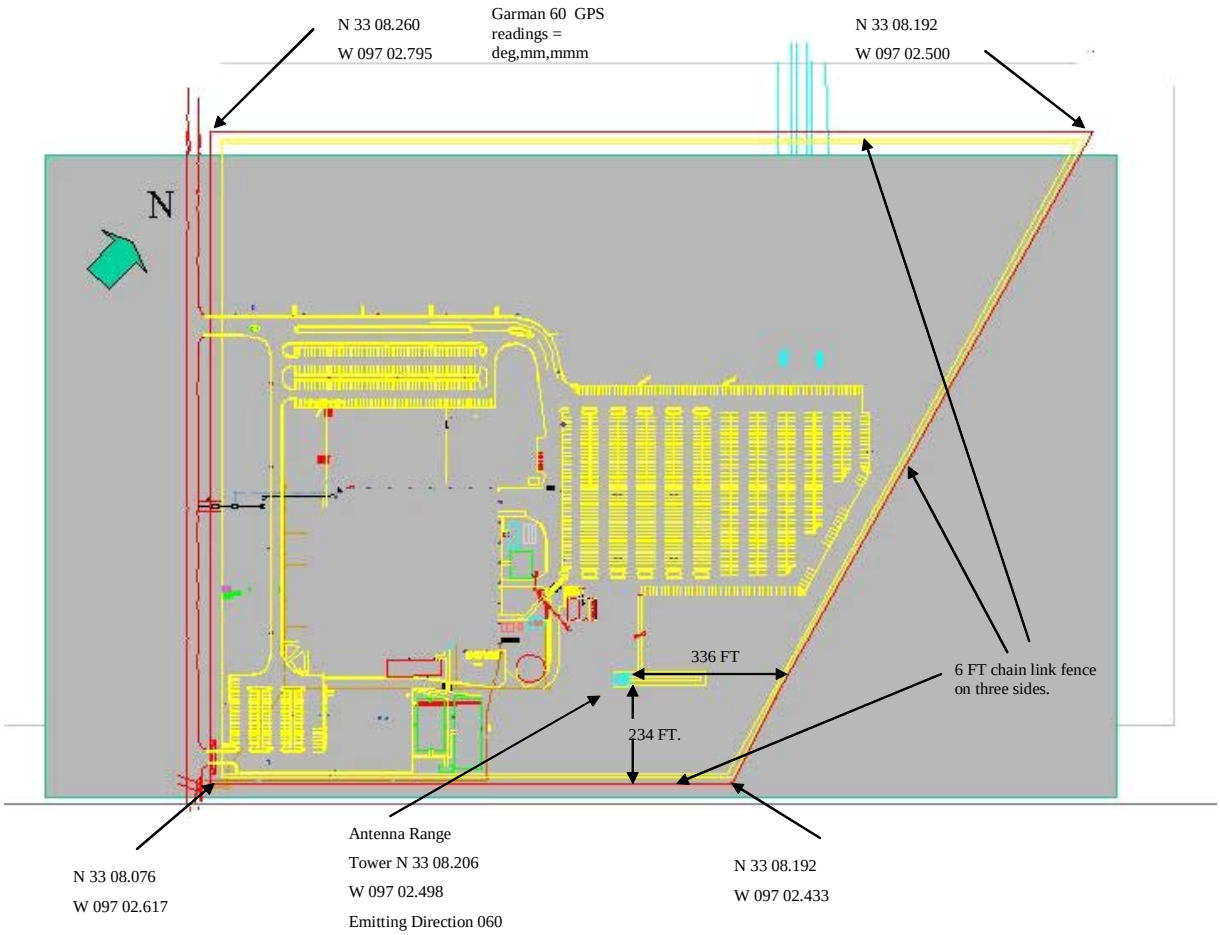


Exhibit 1 - Corinth AWACS Support Facility and Antenna Range

Refer to Exhibit 2. This is a diagram of the antenna test range building and antenna support structures. The structure on the right is a building that protects the transmitting equipment and the receiving analyzer equipment to be evaluated. The antenna support structure attached to the building is 20 feet in height. The transmitting horn antennas are attached and raised to approximately the 12 foot level as shown in the photograph. The radiating beam is aimed to the receive antenna that is mounted on the structure at the left of the photograph. The support structure is a 180 degree antenna positioner that is controlled by equipment located in the building to the right. The receive antenna position is also 12 feet high. The distance between the transmit and receive antennas is 10 feet to 25 feet depending on the tests.

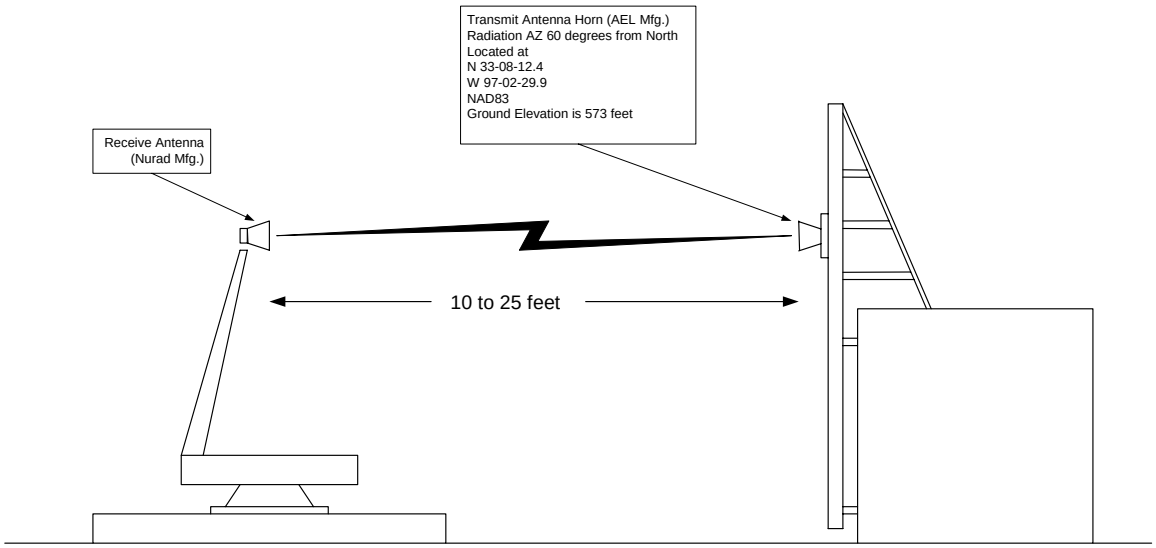
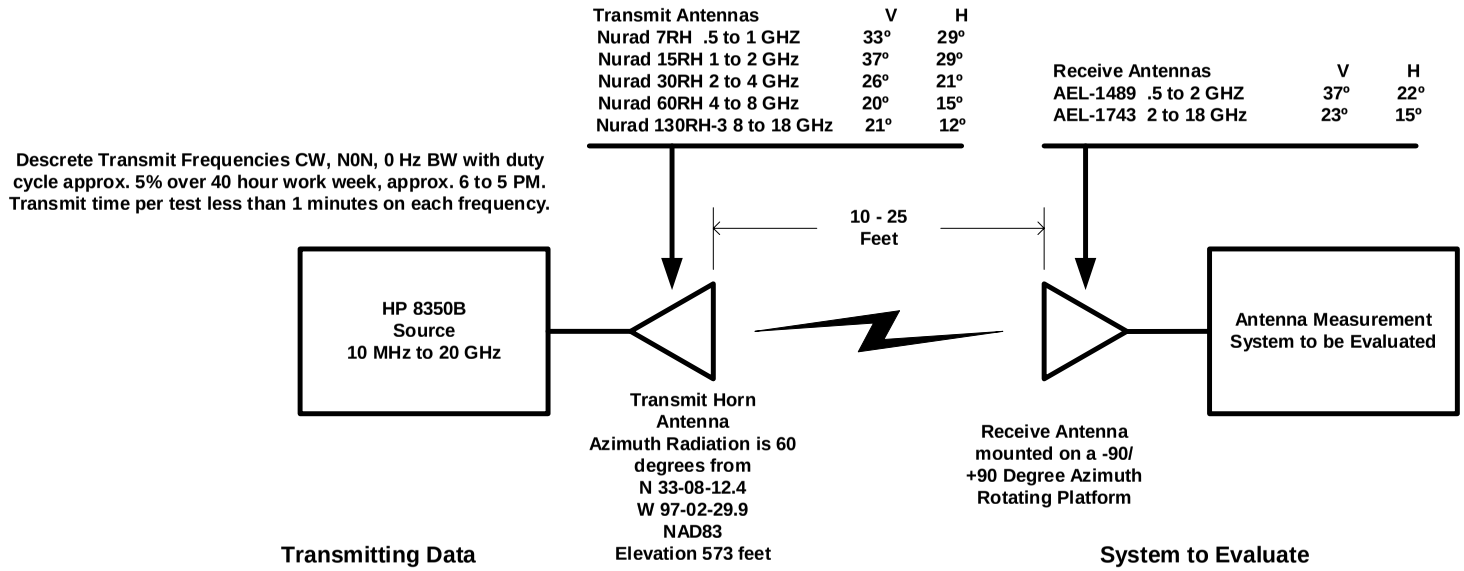


Exhibit 2 – Corinth AWACS Support Antenna Range Structures

Refer to Exhibit 3. This diagram describes the antenna range system components and specifications. The block diagram on the left is the transmitting section. The transmitting data is located in the table on the left. The block diagram on the right is the receiving section.

The RF source is set for each discrete frequency in the table, one at a time. The signal is continuous wave (CW), with emission N0N and a bandwidth of zero Hz. The power is precisely controlled for each frequency and will always be 25 mw EIRP. Various Nurad transmit horn antennas are used as shown in exhibit 3. Various receive antenna measurement systems will be evaluated. During the tests, the receive antenna may be turned on the azimuth of -90 and +90 degrees. The transmit horn may be rotated on axis toward the receive antenna. The transmit horn antennas are not rotated on the azimuth. Less than 1 minute is needed to perform a test at one discrete frequency per the approximately 5 systems to be tested. Testing is planed from 6:00 AM to 5:00 PM, Monday to Friday. Testing will begin within 5 business days of receiving the STA and will be needed for 6 months.

The frequency, transmit power in dBm at the transmit horn antenna are shown in the table. The frequency, receive power in dBm are shown in the table in exhibit 3.



Transmitting Data **System to Evaluate**

Range Test Freq. (MHz)	Horn Gain (T) (dB)	Transmitted Power (EIRP mw)	Transmit Antenna
500	8.00	25 mw	7RH
750	10.65	25 mw	7RH
950	10.25	25 mw	7RH
1430	7.15	25 mw	15RH
1715	10.55	25 mw	15RH
1850	11.35	25 mw	15RH
2000	9.90	25 mw	15RH
2000	12.70	25 mw	30RH
2150	13.50	25 mw	30RH
2310	14.25	25 mw	30RH
3590	16.20	25 mw	30RH
6000	19.80	25 mw	60RH
8000	19.75	25 mw	60RH
8000	14.80	25 mw	130RH-3
10500	17.45	25 mw	130RH-3
13000	18.20	25 mw	130RH-3
17690	19.40	25 mw	130RH-3

Exhibit – 3 System Block Diagram and Data