

# LITTON

## Ingalls Shipbuilding

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FEDERAL COMMUNICATIONS COMMISSION  
ELECTROMAGNETIC COMPATIBILITY DIVISION  
EXPERIMENTAL LICENSE BRANCH

**SUBJECT: Request for Special Temporary Authorization (STA) on RTN-20X RADAR SYSTEMS:**

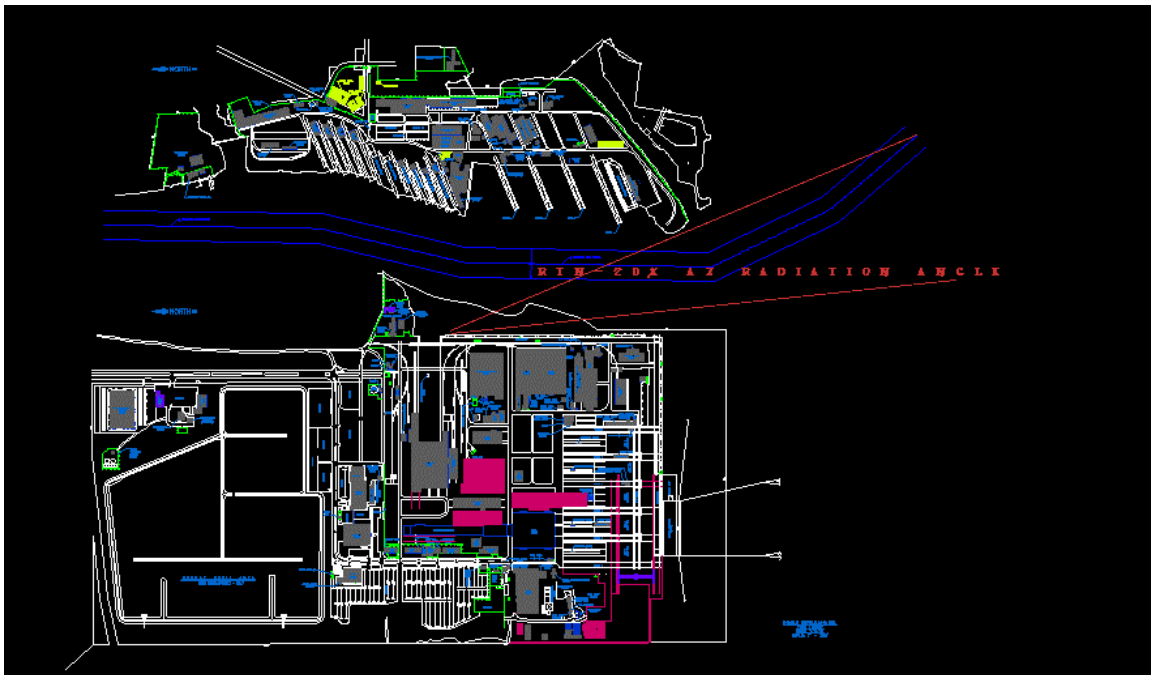
Previous attempts to gain permission to test the RTN-20X Radar Systems under STA (call sign WB9XKJ), (File Number 0366-EX-ST-2000) were denied. At that time, the FCC advised Ingalls Shipbuilding that there are commercial firms that perform frequency searches for a fee and identify frequencies that will not impact other users. Ingalls has contacted *A&H Technologies* of Ocean Springs, Mississippi for assistance in performing a frequency search and compiling data which the FCC may use to re-evaluate our request to radiate and perform in-port testing of the RTN-20X Radar Systems. The following is the report from *A&H Technologies*.

Litton Ingalls Shipbuilding P.O. Box 149, Pascagoula, MS 39568-0149 is requesting a special temporary authorization (STA) to radiate the Alenia Model RTN-20X Fire Control Radars for the purpose of contractually required testing with the Venezuelan Armada. This equipment is being installed on a Lupo 21 Class destroyer currently under overhaul at the ISI Pascagoula facility. This testing is required to verify system operation after installation. The period for STA is being requested from 1 February 2001 to 1 July 2001. Daily radiation will be restricted to periods between 1700 Hours to 0500 Hours Monday through Sunday. ISI is requesting radiation for the restricted area graphically identified in red in the picture of the shipyard layout included in this report. As indicated in the picture, the azimuth radiation zone will be restricted to bearings between 155 degrees to 174 degrees true bearing with radiation elevation angles between +10 to +85 degrees. Radiation will originate from the location in the shipyard commonly referred to as Berth 3. The actual antenna of the TRN-20X is located at Latitude 30 degrees 04 minutes 30 seconds North, Longitude 083 degrees 41 minutes 10 seconds West. The antenna height in reference to mean seal level (MSL) is 37 feet. This height will vary by local tides and winds by as much as plus or minus 3 feet. The requested radiation allocation will keep all main beam energy of this radar clear of land. This will eliminate/minimize potential for interference to local area equipments identified in attached databases search results, and those equipments which are not logged onto an accessible/known database. Surrounding shipyard structures and the distance from closest known receiving equipment (33.7 Kilometers/Bearing 283 degrees) will minimize/eliminate potential for side and back lobe energy to cause interference to known and unknown equipments in the area. Ingalls Shipbuilding has industrial processes in place, which limit RF exposure to civilian and shipyard personnel. This industrial process was developed utilizing standards established by IEEE Standard C95.1, 1999 (Titled- IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3KHz to 300 GHz).

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SHIPYARD LAYOUT WITH RTN-20X RADIATION RESTRICTED TO BETWEEN THE RED LINES.

The RTN-20X parameters utilized for this local area interference analysis are as follows:

Equipment: Orion RTN-20X, Naval Monopulse Tracking Radar

Manufacturer: Alenia Elsas Sistemi Navali

Type: Fire Control

Number Installed: Two, (2)

Bandwidth: 2M40 = 2.40 MHz

Emission Type: P0N (Pulse)

ERP (Effective Radiated Power): 71 dBW

Tx Peak Power Output: 2KW

Antenna Beam Width: 2.3 degrees

Antenna Gain: 36 dB

Antenna Type: Cassegrain

Frequency: 10,700 - 11,800 MHz

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Database searches for all licensed emitters in the 46 Kilometer radius of ISI Shipyard and the Pascagoula area disclosed the following emitter sites. The databases searched were FCC, Government Master File, and ITU.

FCC Agency Serial Number – FCC 08A802

Frequency Range

Lower – 11,700 MHz

Upper – 12,200 MHz

Emission – 36MOF3F

Band Width 3600 Hz

Modulation F3F

Power 300 Watts

Power Type – Pulsed

Command Authority

WLOX TELEVISION STATION

Location

302335N

0890002W

Distance from ISI – 41 Kilometers

Bearing – 278.5 Degrees

Antenna Orientation

Azimuth – 136 degrees

Elevation – 44.7 degrees

FCC Agency Serial Number – FCC 08D51A

Frequency Range

Lower – 11700 MHz

Upper – 112200 MHz

Emission – 1M98G7W

Band Width 1980 Hz

Modulation G7W

Power 300 Watts

Power Type – Pulsed

Command Authority

AT&T CORP.

Location Degrees, Minutes, Seconds - (Biloxi, MS)

30-24-41 N

088-55-08 W

Distance from ISI – 33.7 Kilometers

Bearing – 283.8 Degrees

Antenna Orientation

Azimuth – 146.0 degrees

Elevation – 49.0 degrees

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FCC Agency Serial Number – FCC 08D51D

Frequency Range

Lower – 11700 MHz

Upper – 112200 MHz

Emission – 3M96G7W

Band Width 3960 Hz

Modulation G7W

Power 300 Watts

Power Type – Pulsed

Command Authority

AT&T CORP.

Location Degrees, Minutes, Seconds - (Biloxi, MS)

30-24-41 N

088-55-08 W

Distance from ISI – 33.7 Kilometers

Bearing – 283.8 Degrees

Antenna Orientation

Azimuth – 146.0 degrees

Elevation – 49.0 degrees

FCC Agency Serial Number – FCC 08DAA8

Frequency Range

Lower – 11700 MHz

Upper – 112200 MHz

Emission – 1M98G7W

Band Width 1980 Hz

Modulation G7W

Power 2000 Watts

Power Type – Pulsed

Command Authority

AT&T CORP.

Location Degrees, Minutes, Seconds - (Biloxi, MS)

30-24-41 N

088-55-08 W

Distance from ISI – 33.7 Kilometers

Bearing – 283.8 Degrees

Antenna Orientation

Azimuth – 146.0 degrees

Elevation – 49.0 degrees

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## Ingalls Shipbuilding

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FCC Agency Serial Number – FCC 08DAA9

Frequency Range

Lower – 11700 MHz

Upper – 112200 MHz

Emission – 3M96G7W

Band Width 3960 Hz

Modulation G7W

Power 2000 Watts

Power Type – Pulsed

Command Authority

AT&T CORP.

Location Degrees, Minutes, Seconds - (Biloxi, MS)

30-24-41 N

088-55-08 W

Distance from ISI – 33.7 Kilometers

Bearing – 283.8 Degrees

Antenna Orientation

Azimuth – 146.0 degrees

Elevation – 49.0 degrees

Additional investigation disclosed that businesses such as EXON and WAL-MART have a blanket license for operation of VSAT down link receivers. The locations for these receivers are not listed in any database. The receivers operate from 11.7 to 12.2 GHz. The uplink for these receivers is out of the frequency band of interest.

Thank you for your time and assistance. If any additional information is required to approve the request for an STA, please contact Dale Lynch (228) 935-1875.

Very Respectfully,

Dale Lynch  
LUPO CS Test Team  
Engineering Technician