

0404-EX-ST-2000

STA LICENSE LETTER APPLICATION

July 18, 2000
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Ms. Magalie R. Salas, Secretary
Federal Communications Commission
1919 M Street, NW., Room 222
Washington, DC 20554

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ATTN: Frank Wright,
Office of Engineering and Technology
Re: Request for Special Temporary Authority
for Radio Station License

Dear Ms. Salas:

Raytheon Company herein requests a grant of special temporary authority for a new mobile radio station license beginning August 1, 2000 and extending until December 31, 2000 to operate one land-based INMARSAT "B" earth station from temporary locations in the United States. In support of this request, Raytheon submits the following information:

1. Applicant's Name and Address

Raytheon
1620 Wilshire Drive, Suite 301
Bellevue, Nebraska 68005 USA

2. Name and Address of the person for inquiries regarding this request

Richard D. Rice
Programs Manager
Raytheon Company
1620 Wilshire Drive, Suite 301
Bellevue, Nebraska 68005 USA

3. Particulars of Operation:

Frequency	Power	Modulating	Necessary Bandwidth
1626.5 1646.5 mHz	34 bBW	QPSK and BPSK	20 mHz

(INMARSAT Type Approval Certification No. 3MX001)

4. Geographical location of the proposed operation:

Various locations within the domestic United States. Unit is intended for test and demonstration purposes at potential client/customer locations within the domestic United States.

5. Antenna Type: Directional X Non-Directional
Width of the beam in degrees at the half-power point: - 27dBW
Orientation: Horizontal plane N/A Vertical plane N/A

(Flat panel antenna to be used for test and demonstration purposes at potential client/customer locations within the domestic United States.)

1. Transmitting equipment to be installed:

<u>Manufacturer</u>	<u>Type</u>	<u>Number</u>
Raytheon (Magnavox)	MAGNAphone B	MX 6060

Raytheon, a U.S. Corporation organized under the laws of the state of Delaware, affirmatively states that it does not, in any manner, act as a representative of a foreign government or a subdivision thereof, nor would the authorization sought herein be used for the exclusive purpose of developing radio equipment for export that would come under the jurisdiction of the foreign government. The applicant has never had any FCC station license revoked or any application for permit, license, or renewal ever denied by the Commission.

Raytheon further states that grant of this request would not have a significant environmental impact and, this does not require an Environmental Statement under Section 1.1307 of the commission's Rules. Unless otherwise indicated in an attachment to this request, the authorization sought herein will not be sought for fulfilling the requirements of a government contract with an agency of the United States Government.

In addition, Raytheon further certifies that neither the applicant, nor any other party to this application is subject to a denial of Federal benefits pursuant to Section 5301 of the Anti-Drug Abuse Act of 1988, 21 U.S.C. & 853A.

This temporary license is sought by Raytheon, a US Department of Defense and commercial engineering contracting firm, to operate one INMARSAT "B" terminal from temporary locations in the United States for test and demonstration purposes. Simultaneous to this request, COMSAT has submitted to the Common Carrier Bureau a request for special temporary authority to provide satellite communications services to the subject terminal via the INMARSAT "B" system for the purposes stated herein.

MX 6060 Transmitter/Receiver Technical Specification

Specifications	Applicant Statement		
A. GENERAL			
1 Class of Emission	G7		
2 Frequency Range	1626.5 – 1646.5 MHz		
3 No. of channels	2000		
4 RF Channel spacing	10 kHz		
5 Mode of Operation	QPSK and BPSK		
6 Power Supply	DC	DC	DC
a. Battery type:	N/A	N/A	N/A
b. Nominal voltage:	24V	12V	115/230V
c. Maximum voltage:	32V	20V	240V
d. Minimum voltage:	21V	10V	90V
e. Standby/receive current at nominal voltage:	2.5 A	5A	0.5 A (115VAC)
f. Transmit current (max.) at nominal voltage:	7.2 A	15A	1.5 A (115VAC)
7 Operating Temperature	-25 C to 55 C		
B. TRANSMITTER			
1 Test frequency	N/A		
2 Maximum RF power output	34 dBW (EIRP)		
3 Maximum frequency deviation	N/A		
4 Frequency stability	+/- 200 Hz		
5 Spurious emissions	See paragraph 3.5.2 (Note 2)		
6 Adjacent channel power	-12 dBC		
7 Modulation response	See Figure 5 (Note 2)		
8 Hum and noise	N/A		
9 Audio freq. distortion	See Figure 15 (Note 2)		
10 RF output impedance	50 Ohms		
C. RECEIVER			
1 Test frequency	N/A		
2 Intermediate frequency	170 MHz		
3 Speaker impedance	600 ohms (telephone)		
4 Rated audio frequency output power	0 dBm (telephone)		
5 Useable sensitivity	-152 dBW/m squared (QPSK)		
	-159 dBW/m squared (BPSK)		
6 Quieting sensitivity	N/A		
7 Audio frequency response	See Figure 12 (Note 2)		
8 Audio frequency distortion	See Figure 15 (Note 2)		
9 Hum and noise	-67 dBm OP		
10 Selectivity and desensitization	-40 dB at +/- 25 kHz (Note 1)		
11 Intermodulation spurious attenuation	N/A		
12 Blocking	N/A		
13 Value of resistive load into which the audio output is delivered	600 ohms		

NOTES:

- 1) Receiver desensitization is less than 0.5 dB in the presence of interfering signals +/- 10 KHz away from the desired signal. The interfering signals are 2 dB stronger than the desired signal.
- 2) These specification are in compliance with the Inmarsat requirements as listed in the Inmarsat-B Systems Definition Manual (SDM). The following section is a copy from the Inmarsat B SDM and is provided for reference only.

3.5.2 Spurious Outputs from 24 kbit/s Transmitter

Whilst transmitting any carrier, O-QPSK modulated at 24 kbit/s, at any frequency in the range 1626.5 MHz to 1646.5 MHz (inclusive) and at the maximum output power, the SES shall comply with the following requirements:

- (a) the composite spurious and noise output EIRP (excluding any harmonics but including phase noise and modulation sidebands) radiated by the SES in any 4 kHz band shall fall below the spectrum envelope defined by the following data points:

<u>Frequency (MHz):</u>	<u>EIRP/4 kHz (dBW):</u>
1530.0 and below	-60
1611.5	-55
1626.4	-27
1626.4-1646.6	see (b) below
1646.6	-27
1661.5	-55
1750.0 and above	-60

Note 3.3: in the band 1525 MHz to 1545 MHz, any spurious signals and noise appearing at the receiver input must be substantially lower in order to satisfy the G/T requirements of paragraph 3.4.3;

- (b) in the band 1626.4 to 1646.6 MHz, excluding a ± 100 kHz band about the assigned transmitter carrier frequency, the composite spurious and noise output EIRP (including phase noise and modulation sidebands) radiated by the SES in any 4 kHz band shall be at least 60 dB below the level of the unmodulated carrier; and
- (c) in a ± 100 kHz band about the assigned transmitter carrier frequency, the requirements of paragraphs 3.5.4 (Phase Noise) and 3.5.7.2 (Transmitted Frequency Spectrum) shall apply.

3.5.2.1 to 3.5.2.3 [not used]

3.5.2.4 Spurious Outputs from 132 kbit/s Transmitter

If the SES provides the optional 64 kbit/s High-Speed Data service, whilst transmitting any carrier, O-QPSK modulated at 132 kbit/s, at any frequency in the range 1626.9 MHz to 1646.1 MHz (inclusive) and at the maximum output power, the SES shall comply with the following requirements:

- (a) the composite spurious and noise output EIRP (excluding any harmonics but including phase noise and modulation sidebands) radiated by the SES in any 4 kHz band shall fall below the spectrum envelope defined by the following data points:

<u>Frequency (MHz):</u>	<u>EIRP/4 kHz (dBW):</u>
1530.0 and below	-60
1611.5	-55
1626.4	-27
1626.4-1646.6	see (b) below
1646.6	-27
1661.5	-55
1750.0 and above	-60

Note 3.3: in the band 1525 MHz to 1545 MHz, any spurious signals and noise appearing at the receiver input must be substantially lower in order to satisfy the G/T requirements of paragraph 3.4.3;

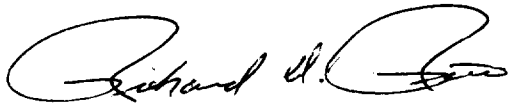
- (b) in the band 1626.4 to 1646.6 MHz, excluding a ± 500 kHz band about the assigned transmitter carrier frequency, the composite spurious and noise output EIRP (including phase noise and modulation sidebands) radiated by the SES in any 4 kHz band shall be at least 60 dB below the level of the unmodulated carrier; and
- (c) in a ± 100 kHz band about the assigned transmitter carrier frequency, the requirements of paragraphs 3.5.4 (Phase Noise) shall apply; and
- (d) in a ± 500 kHz band about the assigned transmitter carrier frequency, the requirements of paragraph 3.5.9.2 (Transmitted Frequency Spectrum) shall apply.

3.5.2.5 [See Annex 4]

July 18, 2000

To Whom It May Concern:

Raytheon Company is a U.S. Department of Defense and commercial engineering contracting firm, seeking to commission one (1) standard INMARSAT "B" unit for test and demonstration purposes at various client/customer locations within the domestic U.S. Raytheon personnel will be the ultimate user and operator of this unit. We wish to commission on or about August 1, 2000. We have forwarded our FCC Form 442 to the FCC for a license to operate these units in the domestic U.S.

A handwritten signature in black ink, appearing to read "Richard D. Rice". The signature is fluid and cursive, with a large loop at the end.

Richard D. Rice
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