

March 7th, 2000

Frank Coperich
Office of Engineering and Technology Laboratory
Federal Communication Commission
7435 Oakland Mills Road
Columbia MD 21046-1609
U.S.A.

Dear Frank,

SUBJECT: FCC ID: ASLMTX5 Open Array Scanner Unit

On June 3rd, Raytheon Marine made an application for equipment authorisation to the Commission for a 4kW X-Band Open Array Scanner unit (FCC ID: ASLMTX5). Subsequently a grant of Type Acceptance was given on August 6th, but with the listed rated peak power reduced from Raytheon's intended figure of 4000 watts to 3000 watts. This occurred because the RF Power Output test measurements provided with the submission did not fully support the transmitter's 4000-watt magnetron power rating. Due to certain time constraints in proposed product deliveries and in estimated time to complete a technical investigation and evaluation, it was decided to accept certification of the transmitter at 3000 Watts.

We now have had the opportunity to complete an investigation into this matter. The conclusions drawn are that the Tx/Rx module assembly and in particular the magnetron, used in Scanner Unit S/N 005 from new, had been at the lower end of the power spread quoted by Raytheon Marine and the magnetron manufacturer. This assembly had also been used for extensive testing prior to carrying out the certification measurements. Although the module had been updated to specification, it now appears that the magnetron (used in the assembly) was never exchanged and at the time of the peak power measurements, which was the final test, its output had fallen below an acceptable power limit.

Scanner Unit S/N 005 was one of the earliest production assemblies and there was very little data available then, with which to compare the certification measurements. Although the peak power measurements were disappointing, they were considered accurate and were submitted to the Commission. It is now become obvious from the recorded production statistic that this early Scanner Unit was not representative of current production.

A standard production Tx/Rx module assembly was selected for re-testing (representative) from a number of production units and fitted to Scanner Unit S/N 005.

For each of the radar's pulse widths, the peak power was measured both at the magnetron port and at the antenna output port. As can be seen from the enclosed test report, the peak power at the magnetron port for all pulse widths, except the two shortest pulses, is well above 4000 watts. The corresponding power at the antenna RF port is approximately 3800 watts. Please note that, on the shorter pulse widths, the RF power is reduced by specification for improved radar performance.

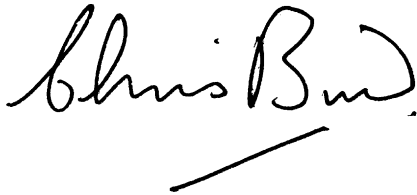
Pulse width measurements have also been taken and the average power has been recalculated. To support the test report measurements, I have included two extracts of production test results taken over a three and a half month period.

I also have enclosed a certification letter attesting that the sample scanner unit tested is a production unit and, within statistical variations that can be expected in production, the technical data recorded is representative for all 4kW X-Band Open Array Scanner units produced of this type.

With due consideration to the above information and enclosed documents Raytheon Marine respectfully request that the Commission's certificate of Type Acceptance is amended to show the original intended rated power of 4000 watts.

If you need any further information or clarification, please do not hesitate to contact me at the above address or by telephone, FAX, or E:Mail given below.

Sincerely,

A handwritten signature in black ink that reads "Chris Bird". The signature is written in a cursive style with a horizontal line underneath the name.

Chris Bird
Approvals Manager
Raytheon Marine Ltd.

cc: Jack Trommer
Robin Bell

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