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30th October, 2002

Gentlemen,

FCC ID: PJ5MTX4-S3

The Commission has already given a grant of type acceptance for the Raymarine 'Pathfinder' 4kW, 24" Radome Radar Scanner Unit (FCC ID: PJ5MTX4-8P), when used in combination with a range of specified Display Units. This application for authorization of a new grant has resulted from proposed changes to enhance performance, which affect the characteristics originally reported to the commission. The new Scanner Unit can be connected to any of the same Display Units that are currently in use, to form light marine radar systems (see Annex 1 below).

The primary changes are to the magnetron (transmitting device) and to the associated circulator, which now incorporates an isolator and low pass filter (LPF). The purpose of these changes is to improve the Spurious Emissions and Out of Band Emissions of the transmitter in accordance with the requirements of ITU-R M1177. The peak-radiated power remains the same at 4 kW, as do the Pulse Repetition Frequencies (PRF). Of the 8 available Pulse Widths, the two shortest have been increased in width. Removal of the unwanted emissions has been mainly achieved by filtering.

The new 4kW Scanner Unit has been fully tested to the appropriate parts of CFR 47 Part 2 and Part 80. The measurement taken data demonstrates that the scanner continues to be compliant with the rules and the performance is within the technical ratings specified by Raymarine (manufacturer).

The modifications will be introduced to all new scanner units of this type in production after the grant has been authorized.

Sincerely,

A handwritten signature in black ink, appearing to read "Chris Bird".

Chris Bird,
Approvals Manager,
Raymarine Limited.

ANNEX 1

The following Raymarine Display Units are combined with the Raymarine **4D**, 4kW 24" Radome Scanner Unit to form operational light marine radar systems.

<i>Display Unit</i>	<i>Scanner Unit</i>	<i>Radar System</i>
SL70M PLUS – 7" mono LCD	4D – 4 kW, 24" radome	SL74M PLUS
SL70MRC PLUS – 7" mono LCD/Chart	4D	SL74MRC PLUS
RL70 PLUS – 7" mono LCD/hsb ²	4D	RL74 PLUS
RL70RC PLUS – 7" mono LCD/hsb ² /Chart	4D	RL74RC PLUS
R70 PLUS – 7" CRT/hsb ²	4D	R74 PLUS
R70RC PLUS – 7" CRT/hsb ² /Chart	4D	R74RC PLUS
R80 PLUS – 10" CRT/hsb ²	4D	R84 PLUS
R80RC PLUS – 10" CRT/hsb ² /Chart	4D	R84RC PLUS
SL70C PLUS – 7" Colour LCD	4D	SL74C PLUS
SL70CRC PLUS – 7" Colour LCD/Chart	4D	SL74CRC PLUS
RL70C PLUS – 7" Colour LCD/hsb ²	4D	RL74C PLUS
RL70CRC PLUS – 7" Colour LCD/hsb ² /Chart	4D	RL74CRC PLUS
RL80C PLUS – 10" Colour LCD/hsb ²	4D	RL84C PLUS
RL80CRC PLUS – 10" Colour LCD/hsb ² /Chart	4D	RL84CRC PLUS

Key:

The allocated designation for each unit or system is shown in **bold**.

hsb² (high speed bus) – allows the connection of one or more repeater display unit

Chart – Chartplotter feature built-in