



October 22, 2015

TUV SUD BABT
Octagon House, Concorde Way
Segensworth Rd N, Fareham
PO15 5RL

Attention: Director of Certification

FCC ID: CKENKE2632
IC: 768F-NKE2632

RE: *Minimum separation distance calculation per guidance from KDB 447498 D01 Mobile Portable RF Exposure v05r02 and RSS-102 Issue 5 March 2015.*

EUT	JMR-7282-SH Marine Radar Equipment
Input Power of the Antenna	852.26 mW (worst case Average power of the EUT)
Antenna Gain	27 dBi (NKE-1632)
Frequency	3065 MHz
FCC Limit (§1.1310 (d)(4))	1.0 mW/cm ² @ 3065 MHz
IC Limit (RSS-102 (4)Table 4)	0.632066 mW/ cm ² @ 3065 MHz

Equation for predicting RF field was used to determine the minimum distance that will comply with the requirements:

$$S = \frac{PG}{4\pi r^2}$$

Where:

S=the power flux

P=input power of the antenna

G=antenna gain relative to an isotropic antenna

r=distance from the antenna to the point of investigation



From this formula, using 0.632066 mW/cm^2 as S (worst case), the distance r is then calculated. This is the minimum distance of compliance with the power density requirements.

$$r = \sqrt{\frac{PG}{4\pi S}}$$

$$r = \sqrt{\frac{(852.26 \text{ mW})(501.19 \text{ numeric antenna gain})}{4\pi (0.632066 \frac{\text{mW}}{\text{cm}^2})}}$$

$$r = \sqrt{\frac{427144.1894 \text{ mW}}{7.943 \frac{\text{mW}}{\text{cm}^2}}}$$

Therefore $r = 232 \text{ centimeters (2.32 meters)}$

Typical installation of the EUT is on commercial shipping vessels. The EUT and its antenna are typically mounted where the general public has no access to, such as common mast, radar mast, on the bridge or arches. Beam of the antenna should be above the crew spaces all the time. Adequate separation distance between the EUT antenna and the general public is always maintained during normal installation since the EUT antenna rotates continuously during operation and requires unobstructed complete view of the surroundings (antenna beam width above obstructions).

Sincerely,

A handwritten signature in black ink, appearing to read 'Ferdie S. Custodio', written over a horizontal line.

Name

Authorized Signatory

Title: EMC/Senior Wireless Test Engineer