



## NOTIFIED BODY STATEMENT OF OPINION

(For Council Directive 1999/5/EC)

This opinion is issued to

**FURUNO ELECTRIC CO., LTD.**

9-52 Ashihara-cho,  
Nishinomiya, 662-8580,  
Japan

to state that the equipment known as

**Radar Sensor DRS4W**

in our opinion, conforms (following an evaluation of its associated Technical Construction File and subject to any restrictions stated in the attached Annex) with the essential requirements of Annex IV of Council Directive 1999/5/EC on radio equipment and telecommunications terminal equipment and the mutual recognition of their conformity, in relation to the essential requirements of :

Article 3.1(a) LVD

Article 3.1(a) EMF

Article 3.1(b) EMC

Article 3.2 Radio Spectrum.

Details of the scope of this opinion, standards used, RF parameters of this equipment and other information necessary for the correct interpretation and application, including any remarks, restrictions or observations that are detailed in the attached Annex.

Signed:

  
Mark Briggs MIET, CErg  
on behalf of UL

Issue Date: 17 April 2014

Notified Body  
Opinion No: AN14C10637-2

## ANNEX

### SCOPE OF OPINION

Article	✓/✗	Applied standard(s) (and version) or reference.
Article 3.1a (LVD):	✓	EN 60950-1:2006 + A11:2009 + A1:2010 + A12:2011 IEC 60945 Ed.4.0: 2002 (Safety aspects also covered under the Marine Directive but not assessed under the scope of this opinion)
Article 3.1a (EMF):	✓	EN 62311:2008
Article 3.1b (EMC)	✓	EN 301 489-17 V2.2.1, EN 301 843-1 V1.3.1, EN 301 489-1 V1.9.2, IEC 60945 Ed.4.0: 2002
Article 3.2 (Radio Spectrum use)	✓	EN 302 248 V1.2.1 (ITU-R M.1177-4, ITU-R SM. 329-11) EN 300 328 V1.7.1
Article 3.3 a-f (Special Features)	-	Not applicable

### TECHNICAL CONSTRUCTION FILE DETAILS

Title:	N/A – technical file consisted of the following documents: Test Reports; Detailed internal and external photographs; Block diagrams; Product specifications; Schematics; Attestation related to spectrum sharing mechanism; Users' Manual.
Reference Number:	-
Issue Date:	4/17/2014
Contact Name:	Yoshihisa Maeda, UL Japan, Inc. (Agent)

### GENERAL PRODUCT DETAILS

Brand / Trade Name:	FURUNO
Model Number(s) / Type Designation:	DRS4W
Build Version / Revision Level:	Main schematic version 03-184-6102-1
Software Name and Version:	0359327-T01.03
Operating Frequency	Marine Radar: 9410 MHz 802.11b: 2412 – 2472 MHz
Declared Output Power (dBm, e.i.r.p or e.r.p)	Marine Radar: 56.6dBW eirp (20.6dBi gain antenna) 802.11b: < 20dBm eirp (2.14dBi antenna)
Additional Information (modulation)	Marine Radar: Pulse modulation 802.11b: CCK (DQPSK, DBPSK)
Description of Use / Function:	This is a marine radar that includes an 802.11b transceiver to transmit the radar image to an iPhone, iPod or similar device.
Manufacturers Company Name:	Miki Factory
Manufacturers Address:	1 Tomoe, Bessho-cho, Miki City, Hyogo. 673-0443 Japan

## PRODUCT VARIANT DETAILS

Details of Product Variant(s) covered by this Notified Body Opinion: None

## REMARKS, RESTRICTIONS AND OBSERVATIONS

Harmonized standards, as listed in OJ C 297 of 12/10/2013, were used to demonstrate compliance with each applicable article of the R&TTE Directive. All the standards referenced are current as of the date of this opinion. The manufacturer's declaration of conformity appropriately lists the standards used. EN 300 328 V1.7.1 is subject to a date of cessation of presumption of conformity of December 31, 2014.

It was noted that the OJ contains a note for EN 300 328 V1.7.1 that states:

*This version of the standard (i.e. EN 300 328 V1.7.1) gives presumption of conformity with the requirements of Article 3(2) of Directive 1999/5/EC under the following condition: The equipment shall implement an adequate spectrum sharing mechanism, e.g. LBT (Listen Before Talk), DAA (Detect And Avoid), etc., in order to comply with the requirement specified in clause 4.3.5 of this version. Such a mechanism shall facilitate sharing between the various technologies and applications which currently exist and in case of congestion, users will be ensured equal access (and as a consequence a graceful degradation of service to all users). The efficiency of the various sharing mechanisms **can be assessed** using the appropriate clauses of EN 300 328 version 1.8.1.*

The Notified Body has accepted an attestation that the device employs an LBT based spectrum sharing mechanism based on the Clear Channel Assessment (CCA) mode using **energy detect**, as described in IEEE Std. 802.11™-2007 [i.4] clauses 9, 15, 18 or 19, in IEEE Std. 802.11n™-2009 [i.4], clauses 9, 11 without requiring additional testing as described in EN 300 328 V1.8.1 section 4.3.2.5.2.3 based on the technology being used preceding the release of EN 300 328 V1.8.1. The manufacturer is advised that this opinion will only remain valid until September 30, 2014 unless additional testing is performed to demonstrate compliance with EN 300 328 V1.8.1 is submitted. It is further recommended that compliance with EN 301 893 V1.7.1 be demonstrated in advance of the December 31, 2014 date to ensure continued compliance with the essential requirements of the R&TTE Directive.

Compliance with rf exposure requirements is based on a minimum device-to-user separation distance of 0 cm for the outside of the enclosure with the radar operating in a rotational mode and not in a static mode. This is consistent with the anticipated use of the device and the information provided in the User's Manual.

Users should be aware that as this radar is not capable of triggering Search and Rescue Transponders (SARTS) or Radar Beacons (Racons), although permitted for use on pleasure vessels, are not permitted for use on commercial vessels

The product labelling contained the CE mark, the Notified Body number and the Class 2 identifier (alert symbol) as required by the Directive. The Class 2 identifier (alert symbol) is required as operations are subject to licensing. The user manual contained the relevant information regarding restrictions of use associated with the Class 2 status.

## REVISION HISTORY

04/17/14	Original version (-1) released.
04/21/14	Correct issue date from 4/17/2019 to 4/17/2014