IEC61097-2 Section D4.2 & D4.3

and

AS/NZS 4280.1 D4.2,4.2.1,D4.2.2

Report

for the

Ocean Signal E101V VDR EPIRB

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Approval Signatory

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Document History:

Issue#1: 21st September 2015 was withdrawn and replaced by Issue#2: updated with editorial correction.

1.0 DECLARATION

1.1 IEC 61097-2

The Equipment Under Test (EUT) operates at a transmit frequency of 121.375MHz and a burst frequency of 406MHz transmit frequency. Testing was in accordance with 61097-2 D4.2 (Peak Effective Radiated Power) and 61097-21 D4.3 (Off Ground Plane Radiated Power Test) requirements.

Testing was in accordance with AS/NZS 4280.1 D4.2, D4.2.1and D4.2.2.

1.2 Related Submittal(s) Grants

None

1.3 EUT Manufacturer

Trade name:	Ocean Signal.
Company name:	Ocean Signal
Company address:	Unit 4 Ocivan Way Margate Kent CT9 4NN
Manufacturing address:	As above.
Company representative:	Simon Nolan T: +44(0) 1843 282930

1.4 Modifications

N/A

2.0 EUT DESCRIPTION

2.1 Identity

EUT:	E101V
Serial numbers:	Beacon: 0800003P-TSR0001 The battery: 44+ hour discharge, batch # 353224/3 TUV Ref: 75931777 TSR0020 Beacon ref: 0800003P TUV 75931777 TR0001
Sample build:	Production

2.2 Product Operation

The E101V Beacon (EUT) device operates at the frequency of operates at a transmit frequency of 121.375MHz and a burst frequency of 406MHz. The following measurements were carried out on 121.375MHz.

2.3 Support Equipment

N/A

2.4 EMI Site Address & Test Date

EMI Company Offices	Hursley EMC Services Ltd Trafalgar House, Trafalgar Close, Chandlers Ford, Eastleigh Hampshire, SO53 4BW, UK
EMI Measurement Site	Hursley EMC Services Ltd Hursley Park, Winchester, SO21 2JK, UK; FCC Registered UK Designation number: UK0006 Canada Registration Number: 7104A
Test Dates	21st September 2015
HEMCS References:	15R418

3.0 MEASUREMENT PROCEDURE AND INSTRUMENTATION

#ID	CP	Manufacturer	Type	Serial No	Description	Calibration due date
109	3	Schwarzbeck	VULB 9163	9163-321	Trilog antenna (OATS)	19/10/2015
552	1	R & S	ESCI7	1166595007	7GHz Receiver	17/04/2016

CP = Interval period [year] prescribed for external calibrations

Note: 'Calibration due date' means that the instrument is certified with a UKAS or traceable calibration certificate.
'*' denotes that the calibration, as defined by Hursley EMC Services quality system, remains valid whilst within four calendar months of the due date.

3.1 General Operating Conditions

Testing was performed according to the procedures in 61097-2
Instrumentation, including receiver and spectrum analyser bandwidth, comply with the requirements.

3.2 Environmental Ambient

Test Type	Temperature	Humidity	Atmospheric Pressure
Radiated	21 degrees Celsius	54% relative	1019 millibars

3.3 IEC 61097-2 D4.2 Peak Effective Radiated Power

Testing was conducted at the Hursley Open Area Test Site (OATS). With the EUT at ground level the antenna measuring distance was set at 11m to enable full 5 to 20 Degree measurement angle range to be achieved. The antenna height was adjusted to give maximum level. The unit was then rotated on the turn table and readings taken every 30 Degrees. Measurements are done with the antenna in vertical polarity.

With the EUT at 450mm above ground level the antenna measuring distance was set at 10m to enable full 5 to 20 Degree measurement angle range to be achieved. The antenna height was adjusted to give maximum level. The 3.6m x 2.4m absorber was centred on the reflection point. The unit was then rotated on the turn table and readings taken every 90 Degrees. Measurements are done with the antenna in vertical polarity.

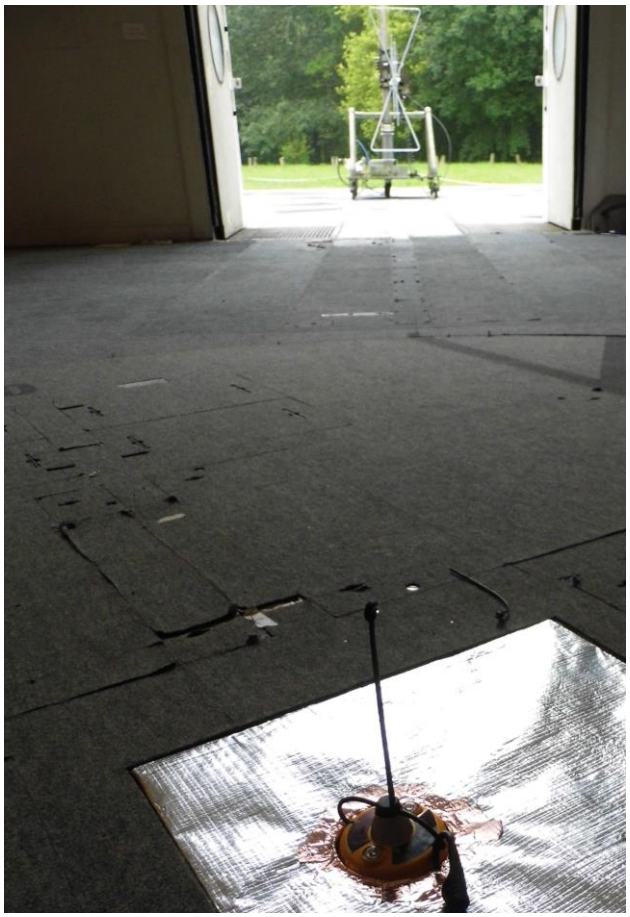
3.3.1 Test 1:

Beacon: 0800003P-TSR0001

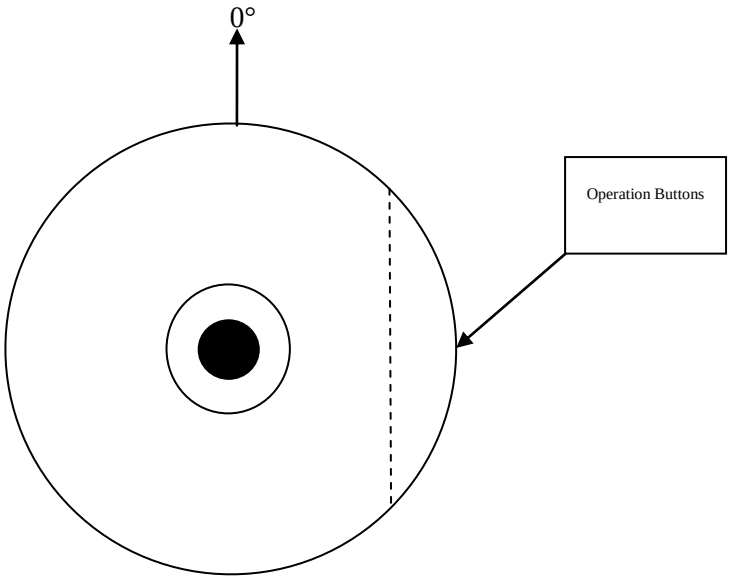
Battery: 44+ hour discharge, batch # 353224/3. TUV Ref 75931777 TSR0020.

Antenna: Internal

EUT sunk in ground plane to float line with foil GP extension.



EUT orientation (top down view):



Height search showed 'main beam' at 7.76° elevation (1.5m):

Boresighted results (dBm) peak:

0°	30°	60°	90°	120°	150°	180°	210°	240°	270°	300°	330°
-17.4	-17.53	-17.65	-17.6	-17.49	-17.27	-17.14	-16.92	-16.83	-16.92	-17.14	-17.38

Calculated EIRP (mW):

0°	30°	60°	90°	120°	150°	180°	210°	240°	270°	300°	330°
48.87	47.42	46.13	46.67	47.86	50.35	51.88	54.58	55.72	54.58	51.88	49.09

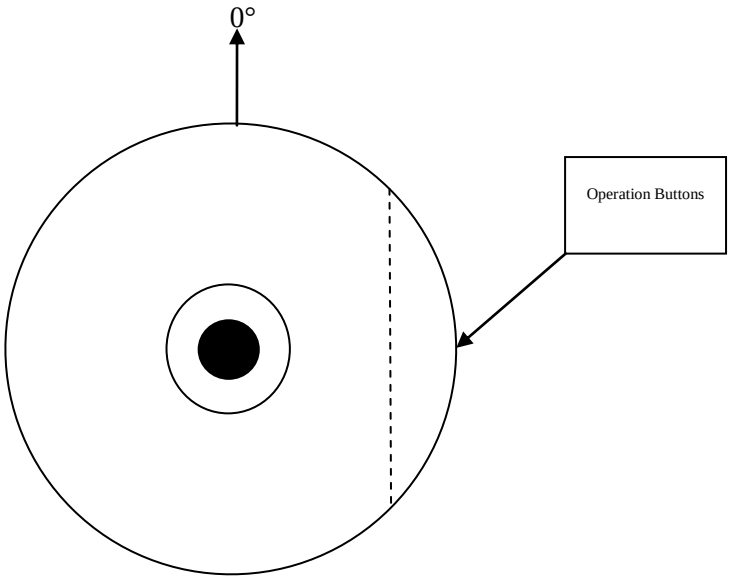
Limits:
Median 25 - 100 mW: Pass
Max value to 11th largest less than 4:1 (6dB): **Pass**

3.3.2 Test 2:

Beacon: 0800003P-TSR0001
Battery: 44+ hour discharge, batch # 353224/3. TUV Ref 75931777 TSR0020.
Antenna: Internal

EUT elevated off GP by 450 mm on non-conductive platform

EUT orientation (top down view):



Height search showed 'main beam' at 5.7°
Δ m = 1.0m elevation, Height from ground plane = 1.45m:

Reflection point = 3.1m from EUT

Boresighted results (dBm) peak:

0°	30°	60°	90°	120°	150°	180°	210°	240°	270°	300°	330°
-11.74			-12.1			-12.15			-11.83		

Calculated EIRP (mW):

0°	30°	60°	90°	120°	150°	180°	210°	240°	270°	300°	330°
145.59			134.01			132.48			142.61		

Limits:

Min value greater than 2 mW: **Pass**

TEST ENGINEER: R Pennell