

ANNEX L

BEACON QUALITY ASSURANCE PLAN

We, manufacturer of Cospas-Sarsat 406 MHz beacons (Manufacturer name and address)

Ocean Signal Ltd

Unit 4, Ocivan Way, Margate, CT9 5HD, United Kingdom

confirm that ALL PRODUCTION UNITS of the following beacon model(s),

RescueME PLB1 (part no. 900S-01240 issue 01.00, software no. 500S-01239 issue 01.00)

(model, hardware part number, firmware part number, software version or part number)

RescueME PLB2 without GPS (part no. 900S-01241 issue 01.00, software no. 500S-01239 issue 01.00)

will meet the Cospas-Sarsat specification and technical requirements in a similar manner to the units subjected for type approval testing. To this effect all production units will be subjected to following tests at ambient temperature:

- Digital message
- Bit rate
- Rise and fall times of the modulation waveform
- Modulation Index (positive/negative)
- Output power
- Frequency stability (short, medium)*

Note*: Beacon manufacturer shall provide technical data on the beacon frequency generation to demonstrate that the frequency stability tests at ambient temperature are sufficient for ensuring that each production beacon will exhibit frequency stability performance similar to the beacon submitted for type approval over the complete operating temperature range. If such assurance of adequate performance over the complete operating temperature range cannot be deduced from the technical data provided and the frequency stability test results at ambient temperature, a thermal gradient test shall be performed on all production units.

- Other tests:

All TCXO devices that are received from the TCXO manufacturer (RAKON) for assembly of production beacons will be inspected to ensure that the RAKON factory test data sheets associated with those TCXO parts demonstrate the following performance, when tested against temperature gradient test in accordance with C/S 001:

- Maximum value of residual frequency variation would not exceed 2.0 ppb;
- Maximum and minimum values of MTS-slope, at steady temperature conditions, would not exceed ± 0.7 ppb/min;
- Maximum and minimum values of MTS-slope, at changing temperature conditions, would not exceed ± 1.7 ppb/min.

GNSS receiver test for PLB1 with GPS only

We confirm that the above tests will be performed as appropriate to ensure that the complete beacon satisfies Cospas-Sarsat requirements, as demonstrated by the test unit submitted for type approval.

We agree to keep the test result sheet of every production beacon for inspection by Cospas -

Sarsat, if required, for a minimum of 10 years.

We confirm that Cospas-Sarsat representative(s) have the right to visit our premises to witness the production and testing process of the above-mentioned beacons. We understand that the cost related to the visit is to be borne by Cospas-Sarsat.

We also accept that, upon official notification of Cospas-Sarsat, we may be required to re-submit a unit of the above beacon model selected by Cospas-Sarsat for the testing of parameters chosen at Cospas-Sarsat discretion at a Cospas-Sarsat accepted test facility selected by the Cospas-Sarsat. We understand that the cost of the testing shall be borne by Cospas-Sarsat.

We understand that the Cospas-Sarsat Type Approval Certificate is subject to revocation should the beacon type for which it was issued, or its modifications, cease to meet the Cospas-Sarsat specifications, or Cospas-Sarsat has determined that this quality assurance plan is not implemented in a satisfactory manner.

Dated: 22nd Dec 2012 Signed: David Sheekey, Product and Approval Manager.....
(Name, Position and Signature of Beacon Manufacturer Representative)



Description of the GPS receiver operation cycle and its phases

T.007: 5.n GNSS Operation

The rescueME PLB1 uses a Quectel L70 GPS module to determine its latitude and longitude position.

Every time the PLB is switched from off to on the GPS is powered up in a cold start mode to acquire the position.

Once a position has been acquired by the receiver then the position is stored for transmission and the GPS module is turned off to conserve battery capacity. Each subsequent start after a successful position update, the GPS is started in a warm start. If a GPS period acquisition results in no GPS position being acquired, then at the next period for a GPS acquisition the GPS is started in cold start mode. The GPS receiver is powered for a maximum period of five minutes if no position has been received.

The GPS position is considered valid if it was obtained less than four hours from the current time. After the position is four hours old a new GPS position must be obtained or the PLB will revert to the default message data until a new valid GPS position is received.

The GPS is cycled on and off as follows if no GPS fix is obtained.

Elapsed Time	ON (maximum)	Cycle Period
1 st hour up to 2 nd hour	5mins	10mins
2 nd hour up to 3 rd hour	5mins	15mins
3 rd hour up to 6 th hour	5mins	30mins
6 th hour up to 12 th hour	5mins	2hr
12 th up to 20 hours	5mins	4hrs

Once the GPS has a fix and has encoded the location into the beacon message. The following applies.

The GPS is cycled on and off as follows if after a GPS fix is obtained.

Elapsed Time	ON (maximum)	Cycle Period
1 st up to 6 th hours	5mins	30mins
6 th up to 12 th hours	5mins	2hr
12 th to >24 th hours	5mins	2hrs

If during the acquisition of GPS signals the GPS availability changes the timing used is obtained by entering the appropriate table as shown above based on the length of time the PLB has been powered.

If there is no GPS position at the 20th hour (four hours without a fix) the GPS is turned off and not turned on again. If however the PLB has a valid fix then the GPS follows the timings as shown in the table for "with GPS Signal". If at any point after the 20th hour the GPS position is not valid (e.g. four hours without a fix) then the GPS is turned off and does not turn on again.

Typical GPS acquisition times and currents for the Quectel L70 module are as follows

Cold Start 20 to 40 seconds average current 10mA

Warm Start 2 to 20 seconds average current 10mA

For operational current consumption figures see sections c. and d.

List and description of all automatic and manually selectable operation modes

T.0007: 5.0 List of operation modes

The rescueME PLB1 has one operational mode.

Manual Activation

The manually activated mode is the normal operating mode of the PLB.

To activate the PLB1 extend the antenna fully by pulling on the black tab. Lift the flap and press the red ON key for 1 second until the green Indicator starts flashing. Release the key. The strobe light will flash. Note: the green indicator is illuminated immediately the key is pressed to confirm key action.

To disable the Active mode press and hold the red ON key for one second until the Red Indicator blinks twice.

In addition there are two test modes.

PLB Test Mode

The test mode tests the operation of the 406 and 121.5MHz transmissions.

To activate the test mode, extend the antenna fully by pulling on the black tab. Lift the flap and press the grey TEST key for 1 second until the red Indicator starts flashing. Release the key.

Note: the red indicator is illuminated immediately the key is pressed to confirm key action.

GNSS Test Mode

The GNSS test mode tests the operation of the GNSS receiver.

Note: this test should be carried out with the PLB in a clear view of the sky and with the front of the PLB pointing vertically upwards.

To activate the GNSS test mode, press the grey TEST key for ten seconds, (the red indicator initially starts flashing then stops flashing staying on at ten seconds). Release the TEST key. The GNSS test active is indicated by the red indicator being on followed by a short flash of the green indicator. This long red short green indicator sequence repeats (approximately 5 second cycle) until a valid GNSS position is acquired or the test time has elapsed. A successful test will be indicated by the strobe flashing and the green indicator flashing. The number of green flashes indicates one more than the number of GNSS test remaining. A failure is indicated at the end of the test time by the strobe flashing and the red indicator flashing. The

test can be ended by holding the Test key down for five seconds (Cancelling the test will reduce the number of available tests by one).

The number of GNSS self tests is limited to ten activations during the rated lifetime of the battery.

After the first GNSS self test, there will be a strobe flash and ten flashes of the green indicator (if successful). Completion of the final available test is indicated by a strobe flash and a single flash of the green indicator. It is not possible to activate any further GNSS self-tests. An attempt to initiate a GNSS test after the final test has been carried out will not turn on the GNSS receiver and therefore the GNSS receiver will not produce any current drain. The failure indication where no more GNSS tests are available is indicated by the red indicator flashing immediately after release of the test key (without any strobe flashing).

The GPS self-test does not cause a self-test transmission.

For beacon models with several variants, a comprehensive description of differences between these variants

T.007: 5.q differences between variants

The rescueME Personal Locator Beacon is supplied in two variants, the PLB1 with integrated GPS receiver and the PLB2 without GPS receiver. The beacons are identical apart from the differences detailed below:-

Electronic Assembly:

Component Description	PLB1	PLB2
ANT1 GPS Patch Antenna	Fitted	Not Fitted
IC1 L70 GPS Receiver	Fitted	Not Fitted
C8 1uF 0603 Ceramic Capacitor	Fitted	Not Fitted
C9 1nF 0402 Ceramic Capacitor	Fitted	Not Fitted
C20 22uF 0806 Ceramic Capacitor	Fitted	Not Fitted
C21 100nF 0402 Ceramic Capacitor	Fitted	Not Fitted
C22 1nF 0402 Ceramic Capacitor	Fitted	Not Fitted
LK2 Normally Open Link	Unmade	Made

Mechanical Assembly:

Component Description	PLB1	PLB2
Case Front Label – PLB1	Fitted	Not Fitted
Case Front Label – PLB2	Not Fitted	Fitted

Product Software:

Both the PLB1 and PLB2 are programmed with the same product software – Ocean Signal Part Number 500S-01239 Issue 01.00

If normally open link LK2 is left unmade, the software is automatically configured as a PLB1 (with GNSS receiver).

If the normally open link LK2 is made, the software is automatically configured as a PLB2 (without GNSS receiver).

Available Transmission Protocols:

Available Transmission Protocol functionality is determined by a configuration process with the factory configuration software. This configuration is only carried out by fully trained and authorised personnel.

Transmission Protocols available for PLB1: ULP, SLP, NLP

Transmission Protocols available for PLB2: UP

Results of test which conducted by the manufacturer:
Beacon Coding Software Test
Position Data Encoding Test

Ocean Signal Ltd.

Test Results

Message Coding Protocols

Navigation System Test Results

Beacon Coding Software Results

Product: PLB1 (PLB)

Software Issue: 00:06

Date: 18 December 2012

Company Name: *Ocean Signal Ltd*Beacon Model: *PLB1***Message Coding Protocols**

Characteristic	Specification
Message Coding Protocols:	(x) Tick the boxes below against the intended protocol options
User Protocol (tick where appropriate)	<input type="checkbox"/> Maritime with MMSI <input type="checkbox"/> Maritime with Radio Call Sign <input type="checkbox"/> EPIRB Float Free with Serial Number <input type="checkbox"/> EPIRB Non Float Free with Serial Number <input type="checkbox"/> Radio Call Sign <input type="checkbox"/> Aviation <input type="checkbox"/> ELT with Serial Number <input type="checkbox"/> ELT with Aircraft Operator and Serial Number <input type="checkbox"/> ELT with Aircraft 24-bit Address <input type="checkbox"/> PLB with Serial Number <input type="checkbox"/> National (Short Message Format) <input type="checkbox"/> National (Long Message Format)
Standard Location Protocol (tick where appropriate)	<input checked="" type="checkbox"/> EPIRB with MMSI <input type="checkbox"/> EPIRB with Serial Number <input type="checkbox"/> ELT with 24-bit Address <input type="checkbox"/> ELT with Aircraft Operator Designator <input type="checkbox"/> ELT with Serial Number <input checked="" type="checkbox"/> PLB with Serial Number
National Location Protocol (tick where appropriate)	<input type="checkbox"/> National Location: EPIRB <input type="checkbox"/> National Location: ELT <input checked="" type="checkbox"/> National Location: PLB
User Location Protocol (tick where appropriate)	<input checked="" type="checkbox"/> Maritime with MMSI <input type="checkbox"/> Maritime with Radio Call Sign <input type="checkbox"/> EPIRB Float Free with Serial Number <input type="checkbox"/> EPIRB Non Float Free with Serial Number <input type="checkbox"/> Radio Call Sign <input type="checkbox"/> Aviation <input type="checkbox"/> ELT with Serial Number <input type="checkbox"/> ELT with Aircraft Operator and Serial Number <input type="checkbox"/> ELT with Aircraft 24-bit Address <input type="checkbox"/> PLB with Serial Number

Company Name: *Ocean Signal Ltd*Beacon Model: *PLB1***BEACON CODING SOFTWARE RESULTS**

Table F-D.1 of C/S T.007 (Issue 4 – Rev.7)
Examples of User Protocol Beacon Messages

Protocol	Operational Message (in hexadecimal including bit and frame synchronisation bits)	Self-Test Message (in hexadecimal including bit and frame synchronisation bits)
Maritime User Protocol with MMSI	N/A	N/A
Maritime User Protocol with Radio Call Sign	N/A	N/A
Radio Call Sign User Protocol	N/A	N/A
Serial User: Float-Free EPIRB with Serial Number	N/A	N/A
Serial User: Non Float-Free EPIRB with Serial Number	N/A	N/A
Aviation User Protocol	N/A	N/A
Serial User: ELT with Serial Number	N/A	N/A
Serial User: ELT with Aircraft Operator Designator & Serial Number	N/A	N/A
Serial User: ELT with Aircraft 24-bit Address	N/A	N/A
Serial User: PLB with Serial Number	N/A	N/A
National User (Short)	N/A	N/A
National User (Long)	N/A	N/A
User Test	N/A	N/A

Company Name: Ocean Signal Ltd

Beacon Model: PLB1

Table F-D.2 of C/S T.007 (Issue 4 – Rev.7)
Examples of Standard and National Location Protocol Beacon Messages

Protocol	Operational Message (in hexadecimal including bit and frame synchronisation bits)		Self-Test Message (in hexadecimal including bit and frame synchronisation bits)	GNSS Self Test Message (if applicable, in hexadecimal including bit and frame synchronisation bits)
	Location 'A'	Location 'B'		Location 'A'
Standard Location: EPIRB with MMSI	FFFE2F8C92F4 23F033403260 39779B469B07	FFFE2F8C92F4 23F03340210C C8F786A4D7C0	FFFED08C92F42 3F07FDFFF2BF0 3783E0F66C	N/A
Standard Location: EPIRB with Serial Number	N/A	N/A	N/A	N/A
Standard Location: ELT with 24-bit Address	N/A	N/A	N/A	N/A
Standard Location: ELT with Aircraft Operator Designator	N/A	N/A	N/A	N/A
Standard Location: PLB with Serial Number	FFFE2F8C97F9 C0633340365A 7B779B469B07	FFFE2F8C97F9 C06333402536 8AF786A4D7C0	FFFED08C97F9 C0637FDFFF11 B23783E0F66C	N/A
Standard Location: Test	FFFE2F8C9EF9 C06333403176 DCF79B469B07	FFFE2F8C9EF9 C0633340221A 2D7786A4D7C0	FFFED08C9EF9 C0637FDFF83D 15B783E0F66C	N/A
National Location: EPIRB	N/A	N/A	N/A	N/A
National Location: ELT	N/A	N/A	N/A	N/A
National Location: PLB	FFFE2F8C9B00 18CCD60161D9 32F704240E3D	FFFE2F8C9B00 18CCD0011208 D53795340DF8	FFFED08C9B00 18DFC0FF042E 9779F3C0010	N/A
National Location: Test	FFFE2F8C9F00 C04CD6016385 A07704240E3D	FFFE2F8C9F00 C04CD0011054 47B795340DF8	FFFED08C9F00 C05FC0FF0672 8BF79F3C0010	N/A
RLS Location: (ELT, EPIRB or PLB)	N/A	N/A	N/A	N/A

Table F-D.3 of C/S T.007 (Issue 4 – Rev.7)
Examples of User-Location Protocol Beacon Messages

Protocol	Operational Message (in hexadecimal including bit and frame synchronisation bits)		Self-Test Message (in hexadecimal including bit and frame synchronisation bits)	GNSS Self Test Message (if applicable, in hexadecimal including bit and frame synchronisation bits)
	Location 'A'	Location 'B'		Location 'A'
Maritime Protocol with MMSI	FFFE2FCC9418 6186186689DE 52A66A01650C	FFFE2FCC9418 6186186689DE 52A668011965	FFFED0CC9418 6186186689DE 52A6E0FF0146	N/A
Maritime Protocol with Radio Call Sign	N/A	N/A	N/A	N/A
Radio Call Sign	N/A	N/A	N/A	N/A
Serial User-Location: Float-Free EPIRB	N/A	N/A	N/A	N/A
Serial User-Location: Non Float-Free EPIRB	N/A	N/A	N/A	N/A
Aviation	N/A	N/A	N/A	N/A
Serial User-Location: ELT	N/A	N/A	N/A	N/A
Serial User-Location: ELT with Aircraft Operator Designator & Serial Number	N/A	N/A	N/A	N/A
Serial User-Location: ELT with Aircraft 24-bit address	N/A	N/A	N/A	N/A
Serial User-Location: PLB	N/A	N/A	N/A	N/A
User- Location: Test	FFFE2FCC9E0A 000C607CEDF5 BA266A01650C	FFFE2FCC9E0A 000C607CEDF5 BA2668011965	FFFED0CC9E0A 000C607CEDF5 BA2FE0FF0146	N/A

Location 'A' = 51°21' 51" N, 1° 23' 25" E

Location 'B' = 51°16' 38" N, 1° 4' 50" E

Distance between locations = 23.6 Km

Analysis of Beacon Messages

In all the tests involving a location protocol the following positions where used:

- Location 'A' = **51°21' 51" N, 1° 23' 25" E**
- Location 'B' = **51°16' 38" N, 1° 4' 50" E**
- Distance between locations = **23.6 Km**

The 'Bit Analysis' tables are taken from the '406 MHz Decode Program Version 3.1' available on the Cospas-Sarsat website, and using the '30 Hexadecimal ID' input format for Location Protocols and '22 Hexadecimal ID' input format for non-location User Protocols.

Company Name: Ocean Signal Ltd

Beacon Model: PLB1

1. Standard Location: EPIRB with MMSI

1.1. Beacon Tester Results

The beacon tester results can be seen in the following files:

Location 'A'	Burst-12382.htm
Location 'B'	Burst-12383.htm
Self Test	Burst-12384.htm

In summary:

15 Hex ID:	1925E847E0FFBFF
Protocol:	EPIRB MMSI SLP Protocol
Burst Mode:	Normal/SelfTest Mode (Long)
Country:	201
MMSI:	999999
Beacon Number:	0
Position Source:	Internal GPS
Auxiliary Radio:	121.5MHz
Bits 107-110:	Default

Condition	Full Hex Message	Latitude	Longitude
Location 'A'	FFFE2F8C92F423F03340326039779B469B07	N 51°21'52"	E 1°23'24"
Location 'B'	FFFE2F8C92F423F03340210CC8F786A4D7C0	N 51°16'40"	E 1°4'52"
Self Test	FFFED08C92F423F07FDFFB2BF03783E0F66C	Default	Default

1.2. Bit Analysis of Normal Message

'30 Hexadecimal' ID = 8C92F423F03340326039779B469B07

ITEM	BITS	VALUE
Message format: long format	25	1
Protocol: Location Protocol	26	0
Country code: 201 - Albania	27-36	0011001001
Type of location protocol: Standard Location - EPIRB (MMSI)	37-40	0010
MID: 999999	41-60	11110100001000111111
Specific Beacon: 0	61-64	0000
Latitude Sign: North	65	0
Latitude Degrees: 51	66-72	0110011
Latitude Minutes: 15	73-74	01
Longitude Sign: East	75	0
Longitude Degrees: 1	76-83	00000001
Longitude Minutes: 30	84-85	10
BCH 1 Encoded:	86-106	010011000000011100101
BCH 1 Calculated:	N/A	010011000000011100101
Fixed bits (1101): Pass	107-110	1101
Position Data: Encoded Position Data Source From Internal Navigation Device	111	1
Aux Device: 121.5 MHz homer	112	1
Latitude Offset Sign: +	113	1
Latitude Offset Minutes: 6	114-118	00110
Latitude Offset Seconds: 52	119-122	1101
Longitude Offset Sign: -	123	0
Longitude Offset Minutes: 6	124-128	00110
Longitude Offset Seconds: 36	129-132	1001
BCH 2 Encoded:	133-144	101100000111
BCH 2 Calculated:	N/A	101100000111
Composite Latitude: 51.36444444444445 Degrees North	N/A	Composite Longitude: 1.39 Degrees East
15 Hex ID:	N/A	1925E847E0FFBFF

1.3. Bit Analysis of Self Test Message

'30 Hexadecimal' ID 8C92F423F07FDFFB2BF03783E0F66C

ITEM	BITS	VALUE
Message format: long format	25	1
Protocol: Location Protocol	26	0
Country code: 201 - Albania	27-36	0011001001
Type of location protocol: Standard Location - EPIRB (MMSI)	37-40	0010
MID: 999999	41-60	11110100001000111111
Specific Beacon: 0	61-64	0000
Latitude Sign: default	65	0
Latitude Degrees: default	66-72	11111111
Latitude Minutes: default	73-74	11
Longitude Sign: default	75	0
Longitude Degrees: default	76-83	11111111
Longitude Minutes: default	84-85	11
BCH 1 Encoded:	86-106	0110010101111110000000
BCH 1 Calculated:	N/A	0110010101111110000000
Fixed bits (1101): Pass	107-110	1101
Position Data: Encoded Position Data Source From Internal Navigation Device	111	1
Aux Device: 121.5 MHz homer	112	1
Latitude Offset Sign: default	113	1
Latitude Offset Minutes: default	114-118	00000
Latitude Offset Seconds: default	119-122	1111
Longitude Offset Sign: default	123	1
Longitude Offset Minutes: default	124-128	00000
Longitude Offset Seconds: default	129-132	1111
BCH 2 Encoded:	133-144	011001101100
BCH 2 Calculated:	N/A	011001101100
Composite Latitude: default	N/A	Composite Longitude: default
15 Hex ID:	N/A	1925E847E0FFBFF

Company Name: Ocean Signal Ltd

Beacon Model: PLB1

2. Standard Location: PLB with Serial Number

2.1. Beacon Tester Results

The beacon tester results can be seen in the following files:

Location 'A'	Burst-12385.htm
Location 'B'	Burst-12386.htm
Self Test	Burst-12387.htm

In summary:

15 Hex ID:	192FF380C6FFBFF
Protocol:	PLB Serial SLP Protocol
Burst Mode:	Normal/SelfTest Mode (Long)
Country:	201
C/S Approval Number:	999
Serial Number:	99
Position Source:	Internal GPS
Auxiliary Radio:	121.5MHz
Bits 107-110:	Default

Condition	Full Hex Message	Latitude	Longitude
Location 'A'	FFFE2F8C97F9C0633340365A7B779B469B07	N 51°21'52"	E 1°23'24"
Location 'B'	FFFE2F8C97F9C063334025368AF786A4D7C0	N 51°16'40"	E 1°4'52"
Self Test	FFFED08C97F9C0637FDFFF11B23783E0F66C	Default	Default

2.2. Bit Analysis of Normal Message

'30 Hexadecimal' ID = 8C97F9C0633340365A7B779B469B07

ITEM	BITS	VALUE
Message format: long format	25	1
Protocol: Location Protocol	26	0
Country code: 201 - Albania	27-36	0011001001
Type of location protocol: Standard Location - PLB (Serial)	37-40	0111
Cospas-Sarsat #: 999	41-50	1111100111
Serial Number: 99	51-64	00000001100011
Latitude Sign: North	65	0
Latitude Degrees: 51	66-72	0110011
Latitude Minutes: 15	73-74	01
Longitude Sign: East	75	0
Longitude Degrees: 1	76-83	00000001
Longitude Minutes: 30	84-85	10
BCH 1 Encoded:	86-106	110010110100111101101
BCH 1 Calculated:	N/A	110010110100111101101
Fixed bits (1101): Pass	107-110	1101
Position Data: Encoded Position Data Source From Internal Navigation Device	111	1
Aux Device: 121.5 MHz homer	112	1
Latitude Offset Sign: +	113	1
Latitude Offset Minutes: 6	114-118	00110
Latitude Offset Seconds: 52	119-122	1101
Longitude Offset Sign: -	123	0
Longitude Offset Minutes: 6	124-128	00110
Longitude Offset Seconds: 36	129-132	1001
BCH 2 Encoded:	133-144	101100000111
BCH 2 Calculated:	N/A	101100000111
Composite Latitude: 51.36444444444445 Degrees North	N/A	Composite Longitude: 1.39 Degrees East
15 Hex ID:	N/A	192FF380C6FFBFF
Message format: long format	25	1

2.3. Bit Analysis of Self Test Message

'30 Hexadecimal' ID = 8C97F9C0637FDFFF11B23783E0F66C

ITEM	BITS	VALUE
Message format: long format	25	1
Protocol: Location Protocol	26	0
Country code: 201 - Albania	27-36	0011001001
Type of location protocol: Standard Location - PLB (Serial)	37-40	0111
Cospas-Sarsat #: 999	41-50	1111100111
Serial Number: 99	51-64	00000001100011
Latitude Sign: default	65	0
Latitude Degrees: default	66-72	11111111
Latitude Minutes: default	73-74	11
Longitude Sign: default	75	0
Longitude Degrees: default	76-83	11111111
Longitude Minutes: default	84-85	11
BCH 1 Encoded:	86-106	111000100011011001000
BCH 1 Calculated:	N/A	111000100011011001000
Fixed bits (1101): Pass	107-110	1101
Position Data: Encoded Position Data Source From Internal Navigation Device	111	1
Aux Device: 121.5 MHz homer	112	1
Latitude Offset Sign: default	113	1
Latitude Offset Minutes: default	114-118	00000
Latitude Offset Seconds: default	119-122	1111
Longitude Offset Sign: default	123	1
Longitude Offset Minutes: default	124-128	00000
Longitude Offset Seconds: default	129-132	1111
BCH 2 Encoded:	133-144	011001101100
BCH 2 Calculated:	N/A	011001101100
Composite Latitude: default	N/A	Composite Longitude: default
15 Hex ID:	N/A	192FF380C6FFBFF

3. Standard Location: Test

3.1. Beacon Tester Results

The beacon tester results can be seen in the following files:

Location 'A'	Burst-12388.htm
Location 'B'	Burst-12389.htm
Self Test	Burst-12390.htm

In summary:

15 Hex ID:	193DF380C6FFBFF
Protocol:	Standard Test Protocol
Burst Mode:	Normal/SelfTest Mode (Long)
Country:	201
Bits 41-64:	16367715
Position Source:	Internal GPS
Auxiliary Radio:	121.5MHz
Bits 107-110:	Default

Condition	Full Hex Message	Latitude	Longitude
Location 'A'	FFFE2F8C9EF9C06333403176DCF79B469B07	N 51°21'52"	E 1°23'24"
Location 'B'	FFFE2F8C9EF9C0633340221A2D7786A4D7C0	N 51°16'40"	E 1°4'52"
Self Test	FFFED08C9EF9C0637FDFF83D15B783E0F66C	Default	Default

3.2. Bit Analysis of Normal Message

'30 Hexadecimal' ID = 8C9EF9C06333403176DCF79B469B07

ITEM	BITS	VALUE
Message format: long format	25	1
Protocol: Location Protocol	26	0
Country code: 201 - Albania	27-36	0011001001
Type of location protocol: Standard Location - Test	37-40	1110
Test Protocol: Test Protocol (No Decode information in bits 41 to 64)	41-64	11111001100000001100011
Latitude Sign: North	65	0
Latitude Degrees: 51	66-72	0110011
Latitude Minutes: 15	73-74	01
Longitude Sign: East	75	0
Longitude Degrees: 1	76-83	00000001
Longitude Minutes: 30	84-85	10
BCH 1 Encoded:	86-106	00101110110110110110011
BCH 1 Calculated:	N/A	00101110110110110110011
Fixed bits (1101): Pass	107-110	1101
Position Data: Encoded Position Data Source From Internal Navigation Device	111	1
Aux Device: 121.5 MHz homer	112	1
Latitude Offset Sign: +	113	1
Latitude Offset Minutes: 6	114-118	00110
Latitude Offset Seconds: 52	119-122	1101
Longitude Offset Sign: -	123	0
Longitude Offset Minutes: 6	124-128	00110
Longitude Offset Seconds: 36	129-132	1001
BCH 2 Encoded:	133-144	101100000111
BCH 2 Calculated:	N/A	101100000111
Composite Latitude: 51.36444444444445 Degrees North	N/A	Composite Longitude: 1.39 Degrees East
15 Hex ID:	N/A	193DF380C6FFBFF

3.3. Bit Analysis of Self Test Message

'30 Hexadecimal' ID = 8C9EF9C0637FDFF83D15B783E0F66C

ITEM	BITS	VALUE
Message format: long format	25	1
Protocol: Location Protocol	26	0
Country code: 201 - Albania	27-36	0011001001
Type of location protocol: Standard Location - Test	37-40	1110
Test Protocol: Test Protocol (No Decode information in bits 41 to 64)	41-64	111110011100000001100011
Latitude Sign: default	65	0
Latitude Degrees: default	66-72	11111111
Latitude Minutes: default	73-74	11
Longitude Sign: default	75	0
Longitude Degrees: default	76-83	11111111
Longitude Minutes: default	84-85	11
BCH 1 Encoded:	86-106	000001111010001010110
BCH 1 Calculated:	N/A	000001111010001010110
Fixed bits (1101): Pass	107-110	1101
Position Data: Encoded Position Data Source From Internal Navigation Device	111	1
Aux Device: 121.5 MHz homer	112	1
Latitude Offset Sign: default	113	1
Latitude Offset Minutes: default	114-118	00000
Latitude Offset Seconds: default	119-122	1111
Longitude Offset Sign: default	123	1
Longitude Offset Minutes: default	124-128	00000
Longitude Offset Seconds: default	129-132	1111
BCH 2 Encoded:	133-144	011001101100
BCH 2 Calculated:	N/A	011001101100
Composite Latitude: default	N/A	Composite Longitude: default
15 Hex ID:	N/A	193DF380C6FFBFF

Company Name: *Ocean Signal Ltd*Beacon Model: *PLB1*

4. National Location: PLB

4.1. Beacon Tester Results

The beacon tester results can be seen in the following files:

Location 'A'	Burst-12391.htm
Location 'B'	Burst-12392.htm
Self Test	Burst-12393.htm

In summary:

15 Hex ID:	19360031BF81FE0
Protocol:	PLB NLP Protocol
Burst Mode:	Normal/SelfTest Mode (Long)
Country:	201 (Albania)
National ID Number:	99
Position Source:	Internal GPS
Auxiliary Radio:	121.5MHz
Bits 107-109:	Default
National Use:	Default

Condition	Full Hex Message	Latitude	Longitude
Location 'A'	FFFE2F8C9B0018CCD60161D932F704240E3D	N 51°21'52"	E 1°23'24"
Location 'B'	FFFE2F8C9B0018CCD0011208D53795340DF8	N 51°16'40"	E 1°4'52"
Self Test	FFFED08C9B0018DFC0FF042E19779F3C0010	Default	Default

4.2. Bit Analysis of Normal Message

'30 Hexadecimal' ID = 8C9B0018CCD60161D932F704240E3D

ITEM	BITS	VALUE
Message format: long format	25	1
Protocol: Location Protocol	26	0
Country code: 201 - Albania	27-36	0011001001
Type of location protocol: National Location - PLB	37-40	1011
Serial Number: 99	41-58	000000000001100011
Latitude Flag: North	59	0
Latitude (Degrees): 51	60-66	0110011
Latitude (Minutes): 22	67-71	01011
Longitude Flag: East	72	0
Longitude (Degrees): 1	73-80	00000001
Longitude (Minutes): 24	81-85	01100
BCH 1 Encoded:	86-106	0011101110010011001011
BCH 1 Calculated:	86-106	0011101110010011001011
Fixed bits (110): Pass	107-109	110
Bits 113 - 132 provides offset data location	110	1
Position Data: Encoded Position Data Source From Internal Navigation Device	111	1
Aux Loc. Device: 121.5 MHz homer	112	1
Latitude Offset Sign: -	113	0
Latitude Offset Minutes: 0	114-115	00
Latitude Offset Seconds: 8	116-119	0010
Longitude Offset Sign: -	120	0
Longitude Offset Minutes: 0	121-122	00
Longitude Offset Seconds: 36	123-126	1001
Additional Id (Nat Use)	127-132	000000
BCH 2 Encoded:	133-144	111000111101
BCH 2 Calculated:	N/A	111000111101
Composite Latitude: 51.36444444444445 Degrees North	N/A	Composite Longitude: 1.39 Degrees East
15 Hex ID:	N/A	19360031BF81FE0

Company Name: *Ocean Signal Ltd*Beacon Model: *PLB1*

4.3. Bit Analysis of Self Test Message

'30 Hexadecimal' ID = 8C9B0018DFC0FF042E19779F3C0010

ITEM	BITS	VALUE
Message format: long format	25	1
Protocol: Location Protocol	26	0
Country code: 201 - Albania	27-36	0011001001
Type of location protocol: National Location - PLB	37-40	1011
Serial Number: 99	41-58	000000000001100011
Latitude Flag: default	59	0
Latitude (Degrees): default	60-66	1111111
Latitude (Minutes): default	67-71	00000
Longitude Flag: default	72	0
Longitude (Degrees): default	73-80	11111111
Longitude (Minutes): default	81-85	00000
BCH 1 Encoded:	86-106	100001011100001100101
BCH 1 Calculated:	86-106	100001011100001100101
Fixed bits (110): Pass	107-109	110
Bits 113 - 132 provides offset data location	110	1
Position Data: Encoded Position Data Source From Internal Navigation Device	111	1
Aux Loc. Device: 121.5 MHz homer	112	1
Latitude Offset Sign: default	113	1
Latitude Offset Minutes: default	114-115	00
Latitude Offset Seconds: default	116-119	1111
Longitude Offset Sign: default	120	1
Longitude Offset Minutes: default	121-122	00
Longitude Offset Seconds: default	123-126	1111
Additional Id (Nat Use)	127-132	000000
BCH 2 Encoded:	133-144	000000010000
BCH 2 Calculated:	N/A	000000010000
Composite Latitude: default	N/A	Composite Longitude: default
15 Hex ID:	N/A	19360031BF81FE0

Company Name: Ocean Signal Ltd

Beacon Model: PLB1

5. National Location: Test

5.1. Beacon Tester Results

The beacon tester results can be seen in the following files:

Location 'A'	Burst-12394.htm
Location 'B'	Burst-12395.htm
Self Test	Burst-12396.htm

In summary:

15 Hex ID:	193E0180BF81FE0
Protocol:	National Test Protocol
Burst Mode:	Normal/SelfTest Mode (Long)
Country:	201 (Albania)
National ID Number:	769
Position Source:	Internal GPS
Auxiliary Radio:	121.5MHz
Bits 107-109:	Default
National Use:	Default

Condition	Full Hex Message	Latitude	Longitude
Location 'A'	FFFE2F8C9F00C04CD6016385A07704240E3D	N 51°21'52"	E 1°23'24"
Location 'B'	FFFE2F8C9F00C04CD001105447B795340DF8	N 51°16'40"	E 1°4'52"
Self Test	FFFED08C9F00C05FC0FF06728BF79F3C0010	Default	Default

5.2. Bit Analysis of Normal Message

'30 Hexadecimal' ID = 8C9F00C04CD6016385A07704240E3D

ITEM	BITS	VALUE
Message format: long format	25	1
Protocol: Location Protocol	26	0
Country code: 201 - Albania	27-36	0011001001
Type of location protocol: National Location - Test	37-40	1111
Serial Number: 769	41-58	000000001100000001
Latitude Flag: North	59	0
Latitude (Degrees): 51	60-66	0110011
Latitude (Minutes): 22	67-71	01011
Longitude Flag: East	72	0
Longitude (Degrees): 1	73-80	00000001
Longitude (Minutes): 24	81-85	01100
BCH 1 Encoded:	86-106	011100001011010000001
BCH 1 Calculated:	86-106	011100001011010000001
Fixed bits (110): Pass	107-109	110
Bits 113 - 132 provides offset data location	110	1
Position Data: Encoded Position Data Source From Internal Navigation Device	111	1
Aux Loc. Device: 121.5 MHz homer	112	1
Latitude Offset Sign: -	113	0
Latitude Offset Minutes: 0	114-115	00
Latitude Offset Seconds: 8	116-119	0010
Longitude Offset Sign: -	120	0
Longitude Offset Minutes: 0	121-122	00
Longitude Offset Seconds: 36	123-126	1001
Additional Id (Nat Use)	127-132	000000
BCH 2 Encoded:	133-144	111000111101
BCH 2 Calculated:	N/A	111000111101
Composite Latitude: 51.36444444444445 Degrees North	N/A	Composite Longitude: 1.39 Degrees East
15 Hex ID:	N/A	193E0180BF81FE0

Company Name: *Ocean Signal Ltd*Beacon Model: *PLB1*

5.3. Bit Analysis of Self Test Message

'30 Hexadecimal' ID = 8C9F00C05FC0FF06728BF79F3C0010

ITEM	BITS	VALUE
Message format: long format	25	1
Protocol: Location Protocol	26	0
Country code: 201 - Albania	27-36	0011001001
Type of location protocol: National Location - Test	37-40	1111
Serial Number: 769	41-58	000000001100000001
Latitude Flag: default	59	0
Latitude (Degrees): default	60-66	1111111
Latitude (Minutes): default	67-71	00000
Longitude Flag: default	72	0
Longitude (Degrees): default	73-80	11111111
Longitude (Minutes): default	81-85	00000
BCH 1 Encoded:	86-106	110011100101000101111
BCH 1 Calculated:	86-106	110011100101000101111
Fixed bits (110): Pass	107-109	110
Bits 113 - 132 provides offset data location	110	1
Position Data: Encoded Position Data Source From Internal Navigation Device	111	1
Aux Loc. Device: 121.5 MHz homer	112	1
Latitude Offset Sign: default	113	1
Latitude Offset Minutes: default	114-115	00
Latitude Offset Seconds: default	116-119	1111
Longitude Offset Sign: default	120	1
Longitude Offset Minutes: default	121-122	00
Longitude Offset Seconds: default	123-126	1111
Additional Id (Nat Use)	127-132	000000
BCH 2 Encoded:	133-144	000000010000
BCH 2 Calculated:	N/A	000000010000
Composite Latitude: default	N/A	Composite Longitude: default
15 Hex ID:	N/A	193E0180BF81FE0

Company Name: *Ocean Signal Ltd*Beacon Model: *PLB1*

6. User Location: Maritime with MMSI

6.1. Beacon Tester Results

The beacon tester results can be seen in the following files:

Location 'A'	Burst-12397.htm
Location 'B'	Burst-12398.htm
Self Test	Burst-12399.htm

In summary:

15 Hex ID:	992830C30C30CD1
Protocol:	EPIRB Maritime User Protocol
Burst Mode:	Normal/SelfTest Mode (Long)
Country:	201 (Albania)
MMSI (Call Sign):	999999
Beacon Number:	0
Spare Bits:	00
Auxiliary Radio:	121.5MHz
Position Source:	Internal GPS

Condition	Full Hex Message	Latitude	Longitude
Location 'A'	FFFE2FCC94186186186689DE52A66A01650C	N 51°20'00"	E 1°24'00"
Location 'B'	FFFE2FCC94186186186689DE52A668011965	N 51°16'00"	E 1°4'00"
Self Test	FFFED0CC94186186186689DE52AFE0FF0146	Default	Default

6.2. Bit Analysis of Normal Message

'30 Hexadecimal' ID = CC94186186186689DE52A66A01650C

ITEM	BITS	VALUE
Message format: long format	25	1
Protocol: User	26	1
Country code: 201 - Albania	27-36	0011001001
User type: Maritime User	37-39	010
Maritime MMSI (6 digits): 999999	40-75	000011000011000011000011000011000011
Specific bcn: 0	76-81	001101
Spare	82-83	00
Aux radio device: 121.5 MHz	84-85	01
Encoded BCH 1:	86-106	001110111100101001010
Calculated BCH 1:	N/A	001110111100101001010
Encoded Position Data Source From Internal Navigation Device	107	1
North	108	0
Latitude (degrees): 51	109-115	0110011
Latitude (minutes): 20	116-119	0101
East	120	0
Longitude (degrees): 1	121-128	00000001
Longitude (minutes): 24	129-132	0110
Encoded BCH 2:	133-144	010100001100
15 Hex ID:	N/A	992830C30C30CD1

Company Name: *Ocean Signal Ltd*Beacon Model: *PLB1*

6.3. Bit Analysis of Self Test Message

'30 Hexadecimal' ID = CC94186186186689DE52AFE0FF0146

ITEM	BITS	VALUE
Message format: long format	25	1
Protocol: User	26	1
Country code: 201 - Albania	27-36	0011001001
User type: Maritime User	37-39	010
Maritime MMSI (6 digits): 999999	40-75	000011000011000011000011000011000011
Specific bcn: 0	76-81	001101
Spare	82-83	00
Aux radio device: 121.5 MHz	84-85	01
Encoded BCH 1:	86-106	001110111100101001010
Calculated BCH 1:	N/A	001110111100101001010
Encoded Position Data Source From Internal Navigation Device	107	1
default	108	0
Latitude (degrees): default	109-115	1111111
Latitude (minutes): default	116-119	0000
default	120	0
Longitude (degrees): default	121-128	11111111
Longitude (minutes): default	129-132	0000
Encoded BCH 2:	133-144	000101000110
Calculated BCH 2:	N/A	000101000110
15 Hex ID:	N/A	992830C30C30CD1

Company Name: *Ocean Signal Ltd*Beacon Model: *PLB1*

7. User Location: Test

7.1. Beacon Tester Results

The beacon tester results can be seen in the following files:

Location 'A'	Burst-12400.htm
Location 'B'	Burst-12401.htm
Self Test	Burst-12402.htm

In summary:

15 Hex ID:	993C140018C0F9D
Protocol:	Test User Protocol
Burst Mode:	Normal/SelfTest Mode (Long)
Country:	201 (Albania)
National Use:	1374415490973
Position Source:	Internal GPS

Condition	Full Hex Message	Latitude	Longitude
Location 'A'	FFFE2FCC9E0A000C607CEDF5BA266A01650C	N 51°20'00"	E 1°24'00"
Location 'B'	FFFE2FCC9E0A000C607CEDF5BA2668011965	N 51°16'00"	E 1°4'00"
Self Test	FFFED0CC9E0A000C607CEDF5BA2FE0FF0146	Default	Default

7.2. Bit Analysis of Normal Message

'30 Hexadecimal' ID = CC9E0A000C607CEDF5BA266A01650C

ITEM	BITS	VALUE
Message format: long format	25	1
Protocol: User	26	1
Country code: 201 - Albania	27-36	0011001001
User type: Test User	37-39	111
National Use, Hex value: 050006303E76	40-85	000001010000000000000110001100000011110011101
15 Hex ID:	N/A	993C140018C0F9D
Encoded BCH 1:	86-106	101111101011011101000
Calculated BCH 1:	N/A	101111101011011101000
Encoded Position Data Source From Internal Navigation Device	107	1
North	108	0
Latitude (degrees): 51	109-115	0110011
Latitude (minutes): 20	116-119	0101
East	120	0
Longitude (degrees): 1	121-128	00000001
Longitude (minutes): 24	129-132	0110
Encoded BCH 2:	133-144	010100001100
Calculated BCH 2:	N/A	010100001100
15 Hex ID:	N/A	993C140018C0F9D

Company Name: *Ocean Signal Ltd*Beacon Model: *PLB1*

7.3. Bit Analysis of Self Test Message

'30 Hexadecimal' ID = CC9E0A000C607CEDF5BA2FE0FF0146

ITEM	BITS	VALUE
Message format: long format	25	1
Protocol: User	26	1
Country code: 201 - Albania	27-36	0011001001
User type: Test User	37-39	111
National Use, Hex value: 050006303E76	40-85	0000010100000000000001100011000000111110011101
15 Hex ID:	N/A	993C140018C0F9D
Encoded BCH 1:	86-106	10111101011011101000
Calculated BCH 1:	N/A	10111101011011101000
Encoded Position Data Source From Internal Navigation Device	107	1
default	108	0
Latitude (degrees): default	109-115	1111111
Latitude (minutes): default	116-119	0000
default	120	0
Longitude (degrees): default	121-128	11111111
Longitude (minutes): default	129-132	0000
Encoded BCH 2:	133-144	000101000110
Calculated BCH 2:	N/A	000101000110
15 Hex ID:	N/A	993C140018C0F9D

NAVIGATION SYSTEM TEST RESULTS**Table F-C.1 of C/S T.007 (Issue 4 Rev. 6 October 2011 and Rev.7 October 2012)****Position Data encoding Results User Location Protocol**

Script Reference (See Table D.2)	Value of Encoded Location Bits Transmitted by Beacon (Hexadecimal)	Confirmation that BCH Correct (✓)
1	Bits 108 – 132 = 0FE0FF0	✓
2	Bits 108 – 132 = 1001000 Number of seconds after providing navigation data that beacon transmitted the above encoded location information: 41.37	✓
3	Bits 108 – 132 = 0000000	✓
4	Bits 108 – 132 = 0006B3C	✓
5	Bits 108 – 132 = 1007B3C	✓
6	Bits 108 – 132 = 1B28590	✓
7	Bits 108 – 132 = 1B29590	✓
8	Bits 108 – 132 = 0B41B40	✓
9	Bits 108 – 132 = 0B3CB40	✓
10	Bits 108 – 132 = 14918A7	✓
Self-Test Navigation Test Scripts (C/S T.007 Issue 4 Rev. 7 October 2012)		
11	Bits 108 – 132 = 0FE0FF0	✓
12	Bits 108 – 132 = 0FE0FF0	✓

Table F-C.2 of C/S T.007 (Issue 4 Rev. 6 October 2011 and Rev.7 October 2012)**Position Data encoding Results Standard Location Protocol**

Script Reference (See Table D.2)	Value of Encoded Location Bits Transmitted by Beacon (Hexadecimal)	Confirmation that BCH Correct (✓)
1	Bits 65 – 85 = 0FFBFF Bits 113 – 132 = 83E0F	✓
2	Bits 65 – 85 = 100400 Bits 113 – 132 = 8420E Number of seconds after providing navigation data that beacon transmitted the above encoded location information: 39.24	✓
3	Bits 65 – 85 = 000000 Bits 113 – 132 = 8360D	✓
4	Bits 65 – 85 = 000ACF Bits 113 – 132 = 0F222	✓
5	Bits 65 – 85 = 0012CE Bits 113 – 132 = 93A60	✓
6	Bits 65 – 85 = 100ECF Bits 113 – 132 = 0FA10	✓
7	Bits 65 – 85 = 1B2964 Bits 113 – 132 = 80A00	✓
8	Bits 65 – 85 = 1B2D64 Bits 113 – 132 = 84E00	✓
9	Bits 65 – 85 = 0B46D0 Bits 113 – 132 = 03801	✓
10	Bits 65 – 85 = 0B42D0 Bits 113 – 132 = 08009	✓
11	Bits 65 – 85 = 14962A Bits 113 – 132 = 80200	✓
Self-Test Navigation Test Scripts (C/S T.007 Issue 4 Rev. 7 October 2012)		
12	Bits 65 – 85 = 0FFBFF Bits 113 – 132 = 83E0F	✓
13	Bits 65 – 85 = 0FFBFF Bits 113 – 132 = 83E0F	✓

Table F-C.3 of C/S T.007 (Issue 4 Rev. 6 October 2011 and Rev.7 October 2012)**Position Data encoding Results National Location Protocol**

Script Reference (See Table D.3)	Value of Encoded Location Bits Transmitted by Beacon (Hexadecimal)	Confirmation that BCH Correct (✓)
1	Bits 59 – 85 = 3F81FE0 Bits 113 – 126 = 27CF	✓
2	Bits 59 – 85 = 4002000 Bits 113 – 126 = 284E Number of seconds after providing navigation data that beacon transmitted the above encoded location information: 37.62	✓
3	Bits 59 – 85 = 0000000 Bits 113 – 126 = 26CD	✓
4	Bits 59 – 85 = 0019678 Bits 113 – 126 = 060D	✓
5	Bits 59 – 85 = 001567A Bits 113 – 126 = 2710	✓
6	Bits 59 – 85 = 401B677 Bits 113 – 126 = 0740	✓
7	Bits 59 – 85 = 6CA0B20 Bits 113 – 126 = 06C0	✓
8	Bits 59 – 85 = 6CA2B20 Bits 113 – 126 = 21C0	✓
9	Bits 59 – 85 = 2D03680 Bits 113 – 126 = 0701	✓
10	Bits 59 – 85 = 2CF5680 Bits 113 – 126 = 2009	✓
11	Bits 59 – 85 = 523F14F Bits 113 – 126 = 2040	✓
Self-Test Navigation Test Scripts (C/S T.007 Issue 4 Rev. 7 October 2012)		
12	Bits 59 – 85 = 3F81FE0 Bits 113 – 126 = 27CF	✓
13	Bits 59 – 85 = 3F81FE0 Bits 113 – 126 = 27CF	✓

Beacon Tester Results

The results from the beacon tester while performing the preceding tests are stored in the following files:

1. User Location Protocol (User Location: Maritime with MMSI)

Script 1	Burst-12344
Script 2	Burst-12345
Script 3	Burst-12346
Script 4	Burst-12347
Script 5	Burst-12348
Script 6	Burst-12349
Script 7	Burst-12350
Script 8	Burst-12351
Script 9	Burst-12352
Script 10	Burst-12353
Script 11	Burst-12354
Script 12	Burst-12355

2. Standard Location Protocol (Standard Location Protocol: PLB with Serial Number)

Script 1	Burst-12356
Script 2	Burst-12357
Script 3	Burst-12358
Script 4	Burst-12359
Script 5	Burst-12360
Script 6	Burst-12361
Script 7	Burst-12362
Script 8	Burst-12363
Script 9	Burst-12364
Script 10	Burst-12365
Script 11	Burst-12366
Script 12	Burst-12367
Script 13	Burst-12368

3. National Location Protocol

Script 1	Burst-12369
Script 2	Burst-12370
Script 3	Burst-12371
Script 4	Burst-12372
Script 5	Burst-12373
Script 6	Burst-12374
Script 7	Burst-12375
Script 8	Burst-12376
Script 9	Burst-12377
Script 10	Burst-12378
Script 11	Burst-12379
Script 12	Burst-12380
Script 13	Burst-12381

Company Name: *Ocean Signal Ltd*

Beacon Model: *PLB1*

Test Equipment Used

1. Personal Computer running CSConfig.exe proprietary GPS NMEA0183 simulation program and beacon interface adaptor. Calibration Date: N/A
2. WS Technologies Inc. 406 Beacon Tester Card (BT100S, Rev 2.3) fitted into iPAQ PDA and running WS Technologies Inc. Beacon Tester Program Rev 2.8. Calibration Date: Dec 13 2013.

Manufacturer's letter regarding software issue numbering

COSPAS – SARSAT
 700 de la Gauchetiere West,
 Suite 2450
 Montreal
 Quebec,
 H3B 5M2
 Canada

Unit 4
 Ocivan Way
 Margate
 Kent
 CT9 4NP

telephone
 +44 (0)1843 282930

email
 info@oceansignal.com

web
 www.oceansignal.com

27th December 2012

Dear Andrey Zhitenev,

The Annex G application forms state the software issue number and release date of the software tested by Omega during the Cospas-Sarsat approval testing. This software carries the pre-release issue number of 00.06

Please note that in accordance with the Ocean Signal quality procedures the final version of the software will be released to production at issue 01.00. The code for this issue will be identical to the tested software, with the sole exception of the embedded issue number.

Yours sincerely



David Sheekey
 Product and Approvals Manager

Registration No
 6627101

Vat No
 938 4374 89

Registered Office
 27 New Dover Road
 Canterbury
 Kent
 CT1 3DN