Parameters to be Measured	Range of Specification	Units	Test Results	Comments
18. Return Link Service (RLS)				
Model: EPIRB3 Pro, S/N: TA000011, TUV Ref: TSR4 and Modification State 1				
A.3.8.8.1 Moffset Test – Config 8 Above Ground				
Self-Test for correct 15 Hex ID	193BFCE031BFDFF	N/A	193BFFA11FBFDFF	
a) RLS Indication RLS request unique distinct indication	≤ 5 seconds after first transmission of RLS request until a valid RLM Type 1 or Test RLM message is received	s	1	Test Start 12:07:18 UTC RLS Request 12:08:09 UTC RLS Indication 12:08:10 UTC
RLS indication is readily visible to the user when the beacon is operated in all declared operational configurations	Must be correct	P/F	P	
RLS indication is clearly visible to the user in direct sunlight, at a distance of 1 meter from the beacon.	Must be correct	P/F	P	
RLS indication remain inactive at all times when the beacon is encoded with any protocol other than RLS Location Protocol or RLS Location Test Protocol;	Must be correct	P/F	P	
Distinct indication that the RLM Type- 1 or Test RLM has been received	< 5 sec, after the RLM has been received until either the beacon is deactivated or the beacon battery is expired	s	1	RLM Reception 12:11:27 UTC RLM Indication 12:11:28 UTC
The beacon only provides the indication of receipt of the RLM Type 1 or Test RLM, which contain the beacon 15 Hex ID	Must be correct		Pass	
b) Transmitted Message Bits 109 – 114	100001	N/A	100001	36 Hex message: FFFE2F8C9DFFD08FCCD012092FF84FBEA8E5
c) GNSS Receiver turns on	≤ 5 seconds after beacon activation	s	1*	* GNSS receiver activates at beacon start up.

Parameters to be Measured	Range of Specification	Units	Test Results	Comments
d) Time to output UTC	Record time since receiver activation	s	14	UTC lock 12:07:32 UTC
e) GNSS Receiver on time	≥ 30 minutes after beacon activation	min	N/T	RLM was received at 12:11:27 UTC, the beacon only supports Type-1 RLM therefore parts e) and h) to k) do not apply.
f) Time to indicate RLM receipt	≤ 30 minutes after beacon activation	min	4.15	
g) Transmitted Message Bits 109 to 114	101001	N/A	101001	36 Hex message: FFFE2F8C9DFFD08FCCD012092FFA4FBEA421
h) GNSS Receiver reactivation time	Moffset minutes +/- 5 seconds past next natural hour	min	N/T	
i) GNSS Receiver on time	≥ 15 minutes after reactivation	min	N/T	
j) GNSS Receiver reactivation time	Moffset minutes +/- 5 seconds past next natural hour	min	N/T	
k) GNSS Receiver on time	≥ 15 minutes after reactivation	min	N/T	

Parameters to be Measured	Range of Specification	Units	Test Results	Comments
A.3.8.8.2 UTC Test - Config 8 Above Ground				
a) Visual Indication	≤ 5 seconds after first transmission	sec	1	Test Start 08:08:37 UTC RLS Request 08:09:30 UTC RLS Indication 08:09:31 UTC
b) Transmitted Message Bits 109 to 114	100001	N/A	100001	36 Hex message: FFFE2F8C9DFFD08FCCD012092FF84FBEA8E5
c) GNSS Receiver turns on	≤ 5 seconds after beacon activation	s	1*	* GNSS receiver activates at beacon start up.
d) Time to output UTC	Record time since receiver activation	s	11	UTC Lock 08:08:47
e) GNSS Receiver position output Deny Beacon further GNSS signals	Valid Lat/Long No further receiver outputs	N/A N/A	Pass Pass	
f) Transmitted message valid location Message Bits 109 to 114	≤ 500m of actual beacon location 100001	m N/A	22.96 100001	Actual Position: N 50° 52.1423', W 1° 14.6799' Encoded Position: N 50° 52' 8", W 1° 14' 39.98" Position Error: 22.96 m 36 Hex message: FFFE2F8C9DFFD08FCCD012092FF84FBEA8E5
g) GNSS Receiver on time	≥ 30 minutes after beacon activation	min	30.08	GNSS Sleep 08:38:42 UTC
h) GNSS Receiver reactivation time (or must be already on)	Moffset minutes +/- 5 seconds past next natural hour	min	1	GNSS Reactivation 09:01:00 UTC
i) GNSS Receiver on time	≥ 15 minutes after reactivation	min	15	GNSS Sleep 09:16:00 UTC
j) Transmitted message valid location Message Bits 109 to 114	≤ 500m of actual beacon location 100001	m N/A	22.96 100001	Actual Position: N 50° 52.1423', W 1° 14.6799' Encoded Position: N 50° 52' 8", W 1° 14' 39.98" Position Error: 22.96 m 36 Hex message: FFFE2F8C9DFFD08FCCD012092FF84FBEA8E5
k) GNSS Receiver reactivation time (or must be already on)	Moffset minutes +/- 5 seconds past next natural hour	min	1	GNSS Reactivation at 10:01:00
m) GNSS Receiver on time	≥ 15 minutes after reactivation	min	N/T	15 min period does not apply as the RLM was received at 10:03:58 UTC and beacon only accepts Type-1 RLM. Part m) is not applicable.
n) Time to indicate RLM receipt	≤ 15 minutes after receiver reactivation	min	2.96	RLM was received at 10:03:58 UTC
o) Transmitted Message Bits 109 to 114 *	101001	N/A	101001	Actual Position: N 50° 52.1423', W 1° 14.6799' Encoded Position: N 50° 52' 8", W 1° 14' 39.98" Position Error: 22.96 m 36 Hex message: FFFE2F8C9DFFD08FCCD012092FFA4FBEA421

Parameters to be Measured	Range of Specification	Units	Test Results	Comments
A.3.8.8.4 RLS GNSS Receiver Satellite Tracking	Correct	P/F	P	See Manufacturer document: 921S-04239 Isue 01.00 EPIRB2+3 AIS - RLS GNSS Receiver Satellite Tracking.pdf.
19. Prevention of Continuous Transmission				Not Applicable
20. Activation and Cancellation Message Test (ELT (DT)) only)				Not Applicable
21. Testing Beacon Controls				**Result: Pass**
Model: EPIRB3 Pro, S/N: TA000005, TUV Ref: TSR2 and Modification State 1				
Self-Test Controls	Comply with A.3.10.1 (i)	P/F	P	
GNSS Self-Test Controls	Comply with A.3.10.1 (ii)	P/F	P	
Operational Controls	Comply with A.3.10.2	P/F	P	

2.1 POWER OUTPUT

2.1.1 Specification

Cospas-Sarsat T.007, Clause A.2.1 (a)

2.1.2 Equipment Under Test and Modification State

EPIRB3 Pro S/N: TA000004 - Modification State 1 (-20°C and +55°C)
EPIRB3 Pro S/N: TA000021 - Modification State 2 (Ambient Only)

2.1.3 Date of Test

16 March 2022 & 17 March 2022 & 03 May 2022

2.1.4 Test Equipment Used

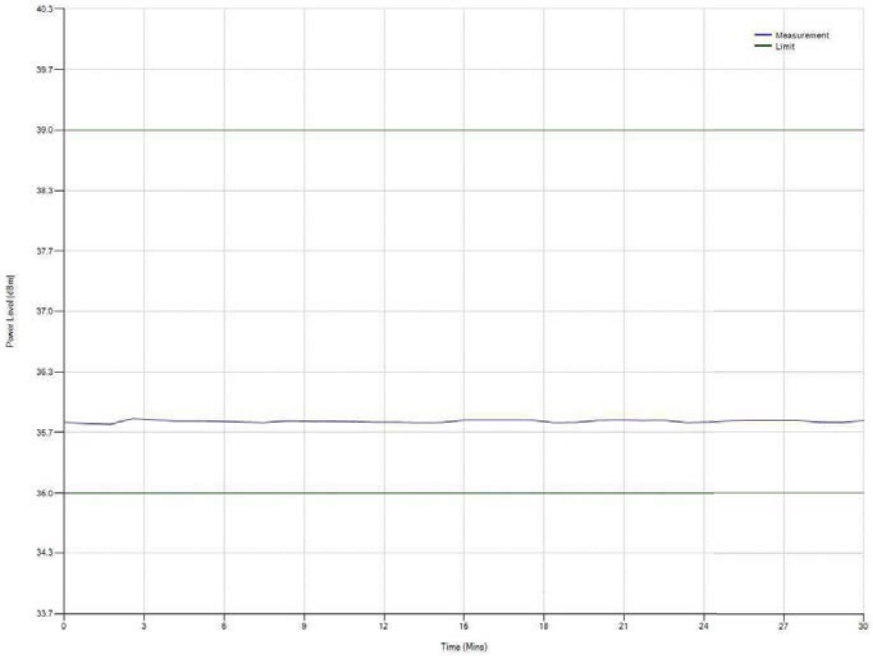
The major items of test equipment used for the above tests are identified in Section 4.1.

2.1.5 Laboratory Environmental Conditions

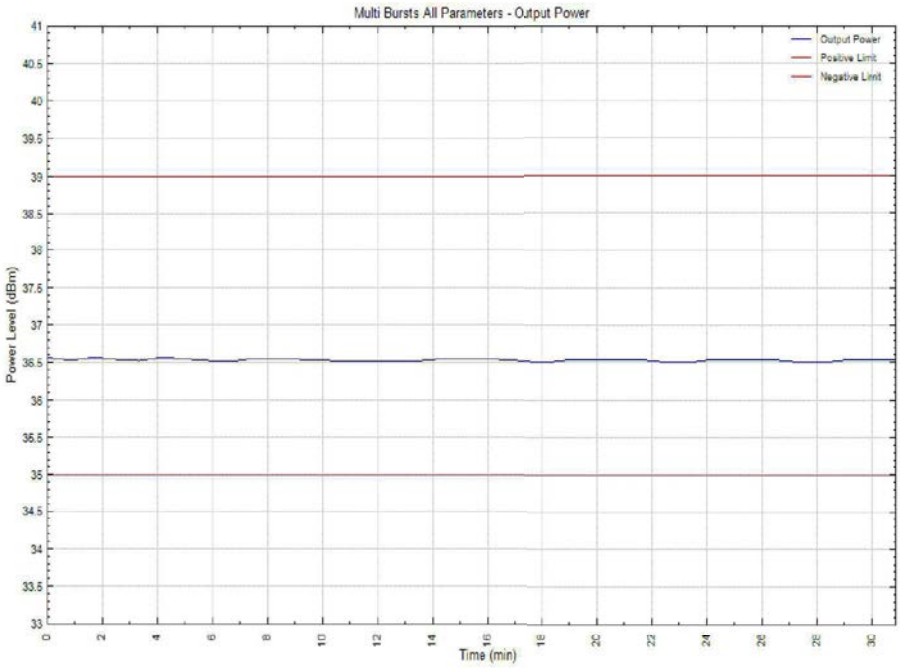
Ambient Temperature 24.3 - 25.4°C
Relative Humidity 28.2 - 38.7%

2.1.6 Test Results

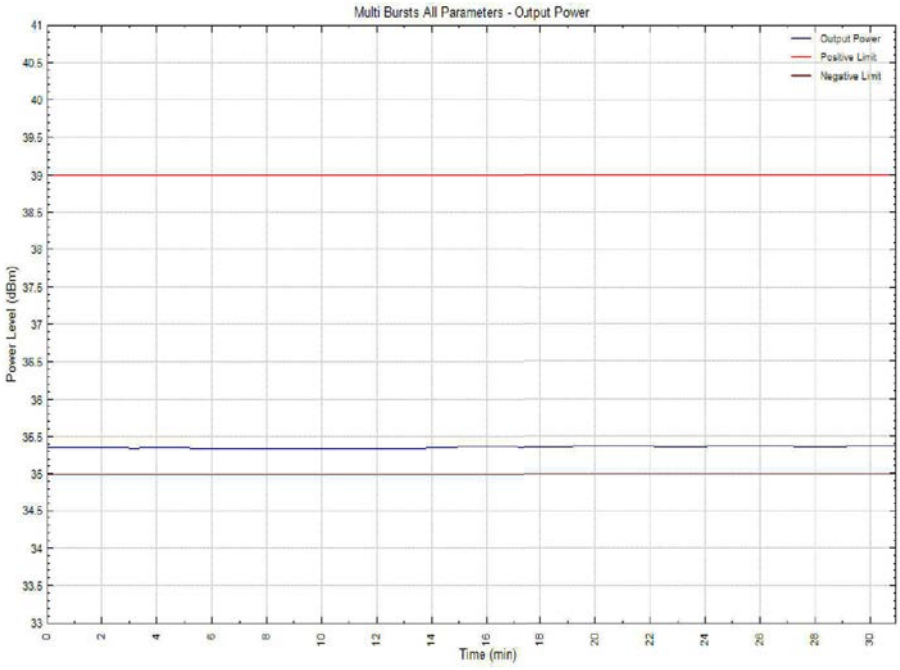
Ambient Temperature



Low Temperature (-20°C)



High Temperature (+55°C)



Summary

The EUT complies with clause A.3.2.2 of Cospas-Sarsat T.007.

2.2 DIGITAL MESSAGE

2.2.1 Specification

Cospas-Sarsat T.007, Clause A.2.1 (b)

2.2.2 Equipment Under Test and Modification State

EPIRB3 Pro S/N: TA000004 - Modification State 1 (-20°C and +55°C)
EPIRB3 Pro S/N: TA000021 - Modification State 2 (Ambient Only)

2.2.3 Date of Test

16 March 2022 & 17 March 2022 & 03 May 2022

2.2.4 Test Equipment Used

The major items of test equipment used for the above tests are identified in Section 4.1.

2.2.5 Laboratory Environmental Conditions

Ambient Temperature 24.3 - 25.4°C
Relative Humidity 28.2 - 38.7%

2.2.6 Test Results

Test Duration: 30 minutes
No. of bursts: 38

Ambient Temperature

Burst 1
Decoded Beacon Message

Hexadecimal code: **FFFE2F8C9DFE7018DFEFF8129DF861F0FABE**

The code consists of 36 hexadecimal characters representing a first generation beacon message with the format flag set to Long including bit and frame synchronization pattern prefix (24 bits) as defined by T.001 Issue 4 - Rev.6.

Unique identifier:
193BFCE031BFDFF

Binary Range	Binary Content	Field Name	Decoded Value
1-15	111111111111111	Bit-synchronization pattern consisting of "1"s shall occupy the first 15-bit positions	True
16-24	000101111	Frame Synchronization Pattern	Normal beacon operation
25	1	Format Flag	Long Message
26	0	Protocol Flag	Location, further information provided in "Protocol Code"
27-36	0011001001	Country code:	Albania - 201
		For associated SAR Points of Contact (SPOC) related to Albania - 201 :	Search Contact list here
37-40	1101	Protocol Code	RLS Location Protocol
41-42	11	Beacon type	RLS Test Location
43-46	1111	Identification type	RLS protocol coded with MMSI last 6 digits
47-66	10011100000001100011	Last 6 digits MMSI	639075
67-75	011111111	Latitude	Default - no location (Default - no location)
76-85	0111111111	Longitude	Default - no location (Default - no location)
86-106	00000010010100111011	BCH-1 error correcting code	BCH-1 code in message matches the recalculated BCH-1 from the PDF-1 field
107	1	Encoded position source	Encoded position data is provided by an internal navigation device
108	1	121.5 Mhz Homing Device	Included in beacon
109	1	Beacon capability to process and automatically generated RLM Type-1	Capable to process an automatically generated RLM Type-1
110	0	Beacon capability to process a manually generated RLM Type-1 RLM Type-2	Not capable to process a manually generated RLM Type-2
111	0	Beacon Feedback on receipt of RLM Type-1	RLM Type-1 (automatic) not received by this beacon
112	0	Beacon Feedback on receipt of RLM Type-2	RLM Type-2 (manual) not received by this beacon
113-114	01	RLS Provider Identification	GALILEO Return Link Service Provider
115-123	100001111	Latitude offset	Default value
124-132	100001111	Longitude offset	Default value
133-144	101010111110	BCH-2 error correcting code	BCH-2 code in message matches the recalculated BCH-2 from the PDF-2 field

Low Temperature (-20°C)

Burst 1
Decoded Beacon Message

Hexadecimal code: **FFFE2F8C9DFE7018DFEFF8129DF861F0FABE**

The code consists of 36 hexadecimal characters representing a first generation beacon message with the format flag set to Long including bit and frame synchronization pattern prefix (24 bits) as defined by T.001 Issue 4 - Rev.6.

Unique identifier:
193BFCE031BFDFF

Binary Range	Binary Content	Field Name	Decoded Value
1-15	111111111111111	Bit-synchronization pattern consisting of "1"s shall occupy the first 15-bit positions	True
16-24	000101111	Frame Synchronization Pattern	Normal beacon operation
25	1	Format Flag	Long Message
26	0	Protocol Flag	Location, further information provided in "Protocol Code"
27-36	0011001001	Country code:	Albania - 201
		For associated SAR Points of Contact (SPOC) related to Albania - 201 :	Search Contact list here
37-40	1101	Protocol Code	RLS Location Protocol
41-42	11	Beacon type	RLS Test Location
43-46	1111	Identification type	RLS protocol coded with MMSI last 6 digits
47-66	10011100000001100011	Last 6 digits MMSI	639075
67-75	011111111	Latitude	Default - no location (Default - no location)
76-85	0111111111	Longitude	Default - no location (Default - no location)
86-106	00000010010100111011	BCH-1 error correcting code	BCH-1 code in message matches the recalculated BCH-1 from the PDF-1 field
107	1	Encoded position source	Encoded position data is provided by an internal navigation device
108	1	121.5 Mhz Homing Device	Included in beacon
109	1	Beacon capability to process and automatically generated RLM Type-1	Capable to process an automatically generated RLM Type-1
110	0	Beacon capability to process a manually generated RLM Type-1 RLM Type-2	Not capable to process a manually generated RLM Type-2
111	0	Beacon Feedback on receipt of RLM Type-1	RLM Type-1 (automatic) not received by this beacon
112	0	Beacon Feedback on receipt of RLM Type-2	RLM Type-2 (manual) not received by this beacon
113-114	01	RLS Provider Identification	GALILEO Return Link Service Provider
115-123	100001111	Latitude offset	Default value
124-132	100001111	Longitude offset	Default value
133-144	101010111110	BCH-2 error correcting code	BCH-2 code in message matches the recalculated BCH-2 from the PDF-2 field

High Temperature (+55°C)

Burst 1
Decoded Beacon Message

Hexadecimal code: **FFFE2F8C9DFE7018DFEFF8129DF861F0FABE**

The code consists of 36 hexadecimal characters representing a first generation beacon message with the format flag set to Long including bit and frame synchronization pattern prefix (24 bits) as defined by T.001 Issue 4 - Rev.6.

Unique identifier:
193BFCE031BFDFF

Binary Range	Binary Content	Field Name	Decoded Value
1-15	111111111111111	Bit-synchronization pattern consisting of "1"s shall occupy the first 15-bit positions	True
16-24	000101111	Frame Synchronization Pattern	Normal beacon operation
25	1	Format Flag	Long Message
26	0	Protocol Flag	Location, further information provided in "Protocol Code"
27-36	0011001001	Country code:	Albania - 201
		For associated SAR Points of Contact (SPOC) related to Albania - 201 :	Search Contact list here
37-40	1101	Protocol Code	RLS Location Protocol
41-42	11	Beacon type	RLS Test Location
43-46	1111	Identification type	RLS protocol coded with MMSI last 6 digits
47-66	10011100000001100011	Last 6 digits MMSI	639075
67-75	011111111	Latitude	Default - no location (Default - no location)
76-85	0111111111	Longitude	Default - no location (Default - no location)
86-106	00000010010100111011	BCH-1 error correcting code	BCH-1 code in message matches the recalculated BCH-1 from the PDF-1 field
107	1	Encoded position source	Encoded position data is provided by an internal navigation device
108	1	121.5 Mhz Homing Device	Included in beacon
109	1	Beacon capability to process and automatically generated RLM Type-1	Capable to process an automatically generated RLM Type-1
110	0	Beacon capability to process a manually generated RLM Type-1 RLM Type-2	Not capable to process a manually generated RLM Type-2
111	0	Beacon Feedback on receipt of RLM Type-1	RLM Type-1 (automatic) not received by this beacon
112	0	Beacon Feedback on receipt of RLM Type-2	RLM Type-2 (manual) not received by this beacon
113-114	01	RLS Provider Identification	GALILEO Return Link Service Provider
115-123	100001111	Latitude offset	Default value
124-132	100001111	Longitude offset	Default value
133-144	101010111110	BCH-2 error correcting code	BCH-2 code in message matches the recalculated BCH-2 from the PDF-2 field

Summary

The EUT complies with clause A.3.1.4 of Cospas-Sarsat T.007.

2.3 MODULATION

2.3.1 Specification

Cospas-Sarsat T.007, Clause A.2.1 (d)

2.3.2 Equipment Under Test and Modification State

EPIRB3 Pro S/N: TA000004 - Modification State 1 (-20°C and +55°C)
EPIRB3 Pro S/N: TA000021 - Modification State 2 (Ambient Only)

2.3.3 Date of Test

16 March 2022 & 17 March 2022 & 03 May 2022

2.3.4 Test Equipment Used

The major items of test equipment used for the above tests are identified in Section 4.1.

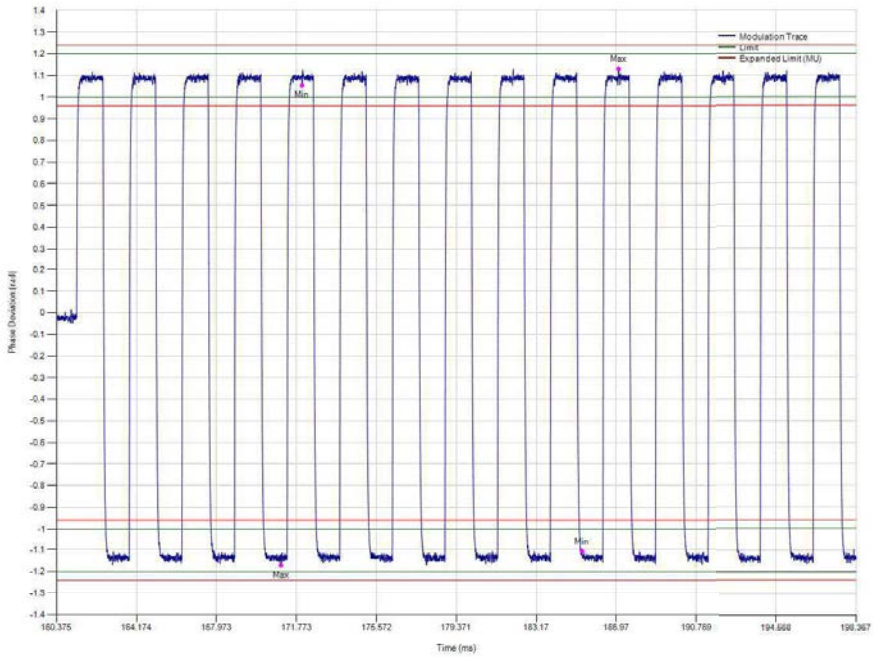
2.3.5 Laboratory Environmental Conditions

Ambient Temperature 24.3 - 25.4°C
Relative Humidity 28.2 - 38.7%

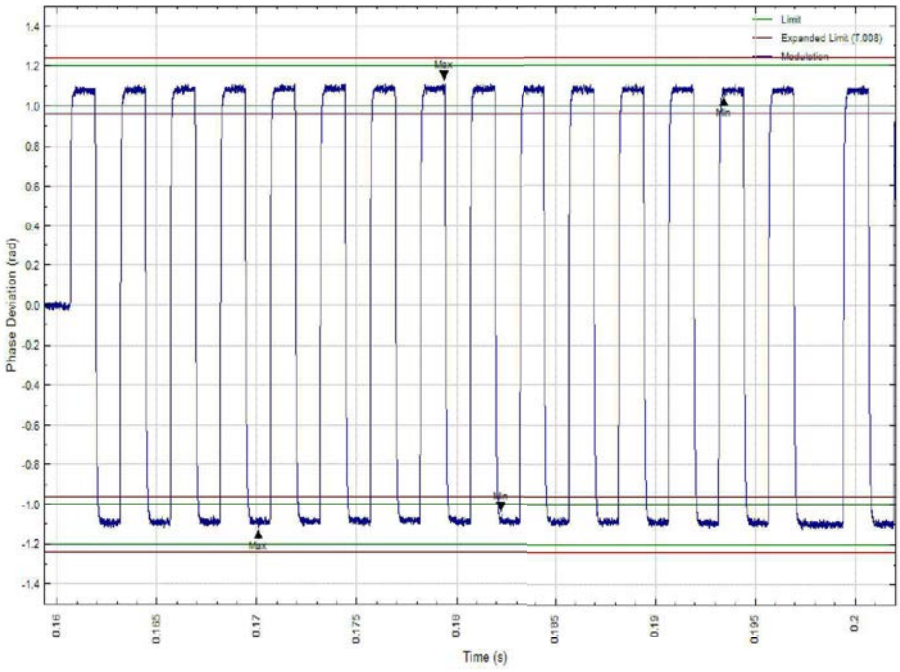
2.3.6 Test Results

Test Duration: 30 minutes
No. of bursts: 38

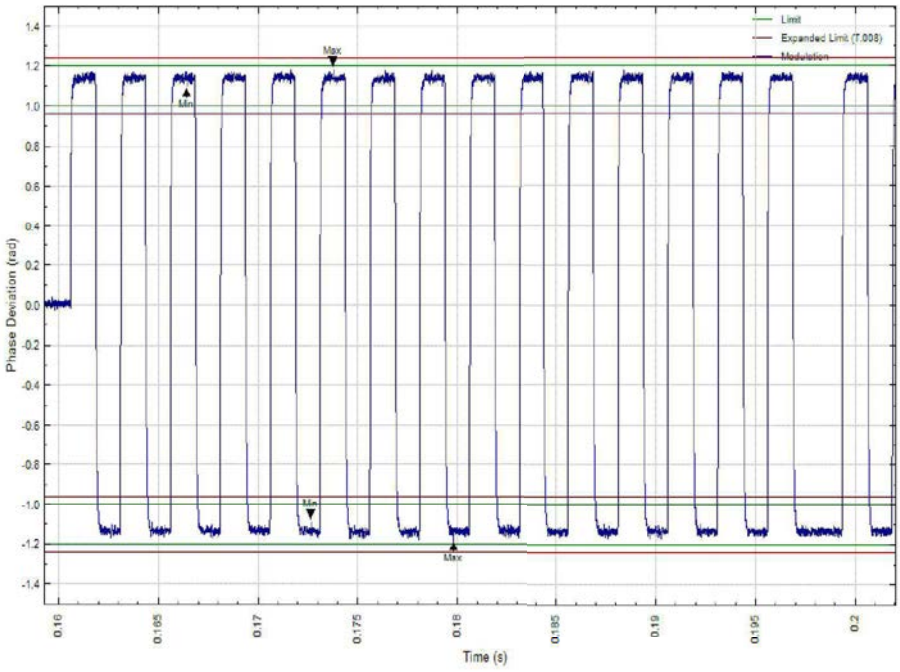
Ambient Temperature



Low Temperature (-20°C)



High Temperature (+55°C)



Summary

The EUT fails to comply* with clause A.3.2.3 of Cospas-Sarsat T.007.

*At maximum temperature, the positive phase deviation falls outside of T.007. However, it is within the Test Facility limits stated in T.008.

2.4 406 MHZ TRANSMITTED FREQUENCY

2.4.1 Specification

Cospas-Sarsat T.007, Clause A.2.1 (e)

2.4.2 Equipment Under Test and Modification State

EPIRB3 Pro S/N: TA000004 - Modification State 1 (-20°C and +55°C)
EPIRB3 Pro S/N: TA000021 - Modification State 2 (Ambient Only)

2.4.3 Date of Test

16 March 2022 & 17 March 2022 & 03 May 2022

2.4.4 Test Equipment Used

The major items of test equipment used for the above tests are identified inSection 4.1.

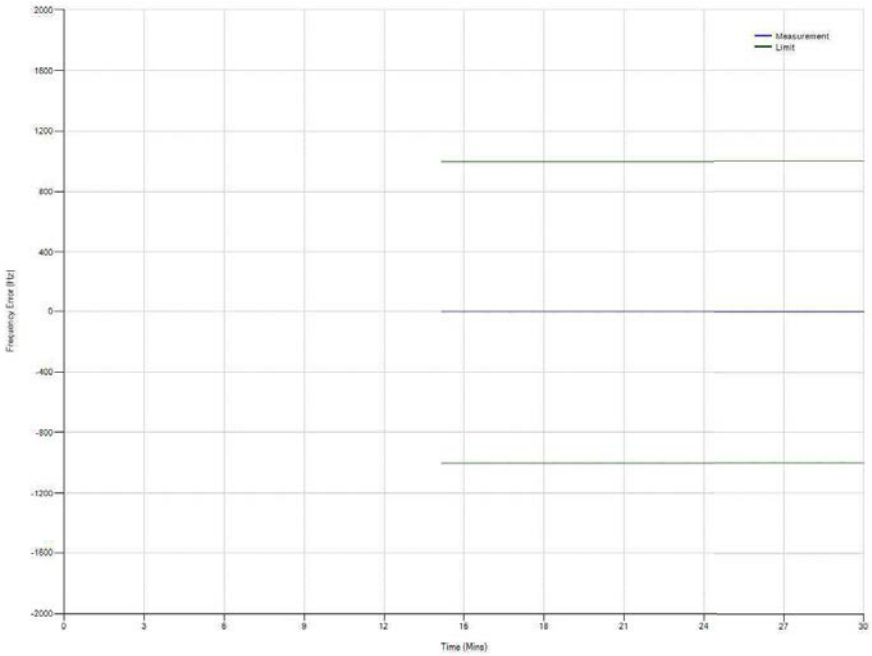
2.4.5 Laboratory Environmental Conditions

Ambient Temperature 24.3 - 25.4°C
Relative Humidity 28.2 - 38.7%

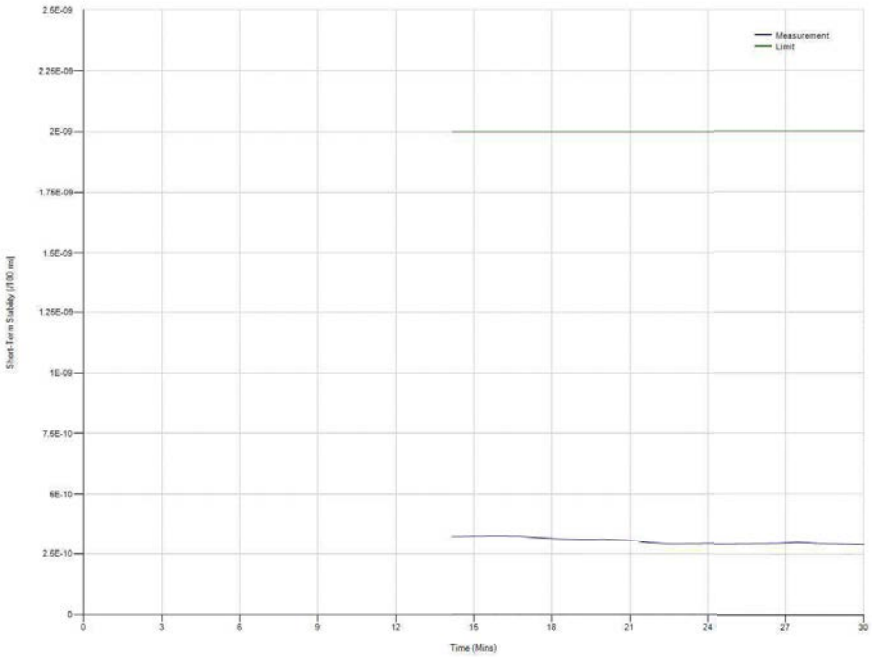
2.4.6 Test Results

Ambient Temperature

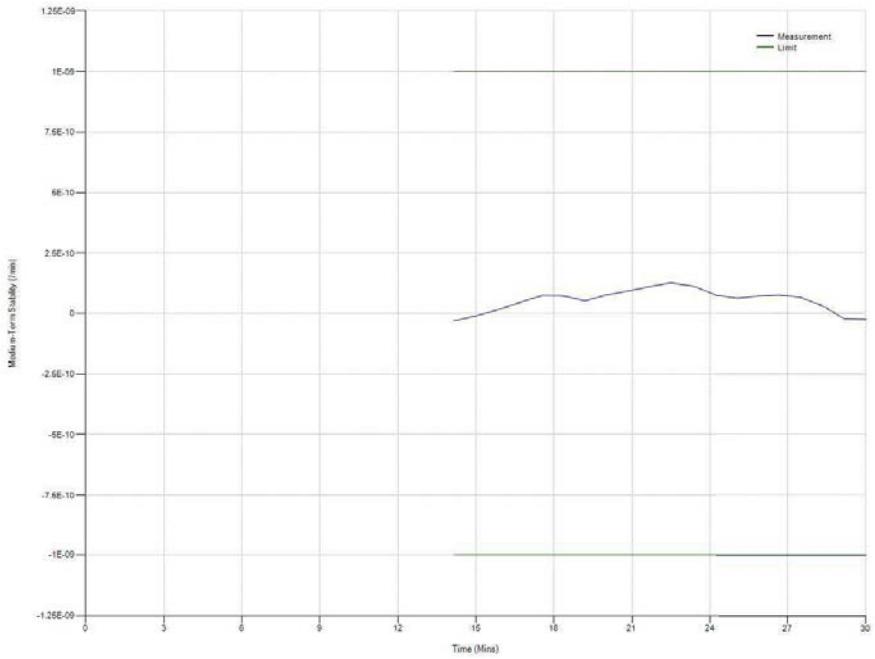
Nominal Frequency



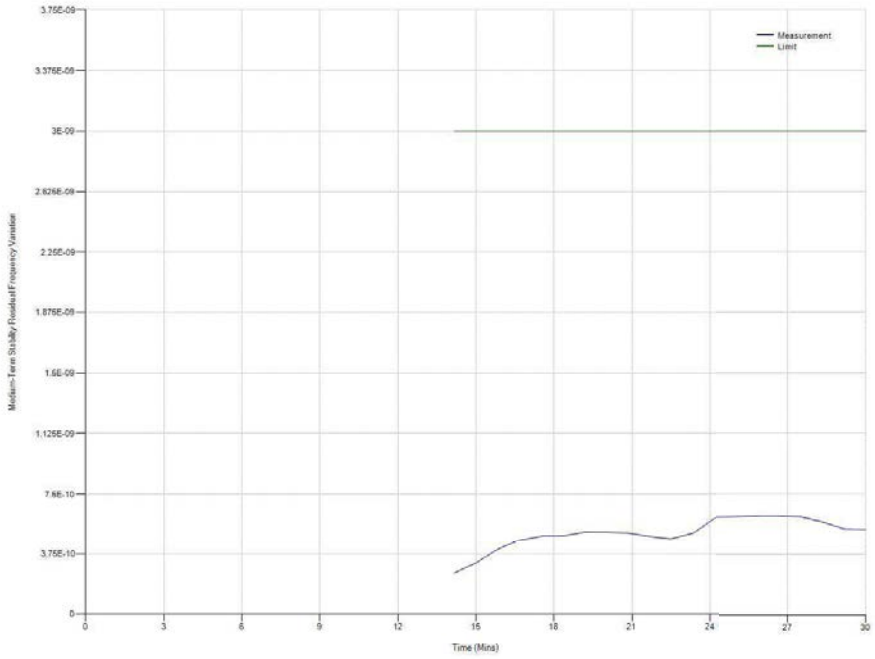
Short Term Stability



Medium Term Stability – Slope

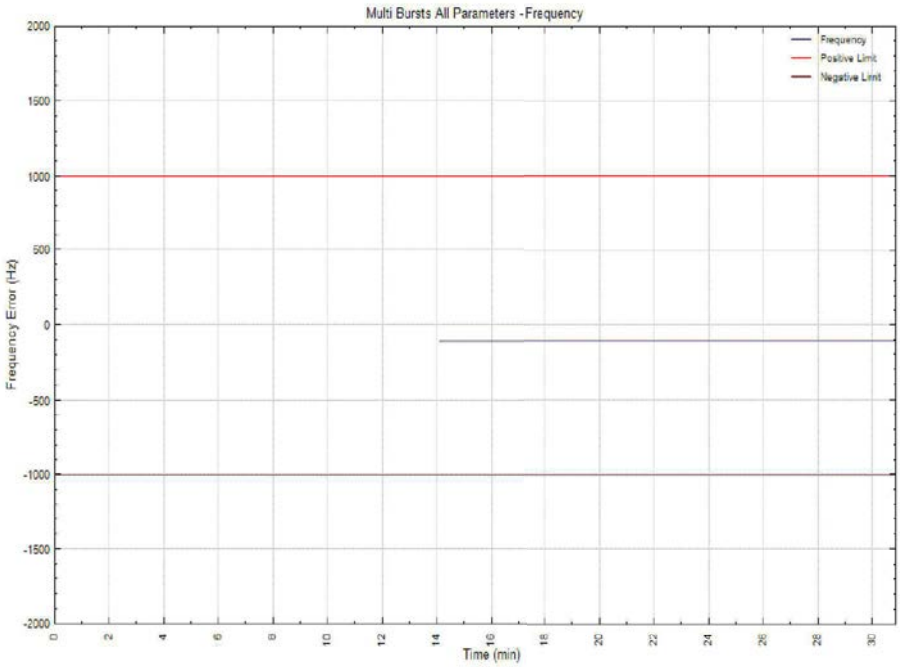


Medium Term Stability – Residual Frequency Variation

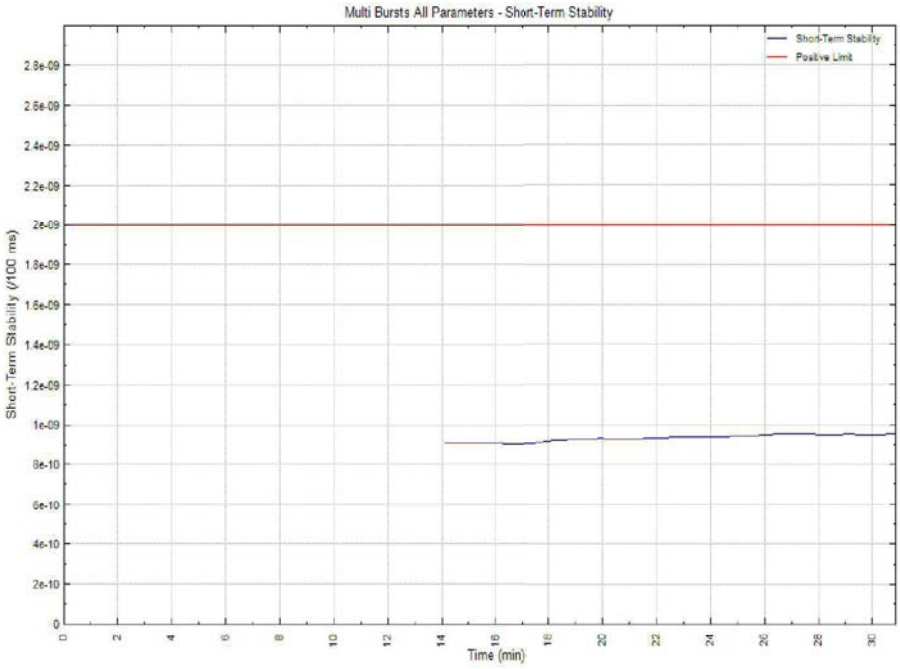


Low Temperature (-20°C)

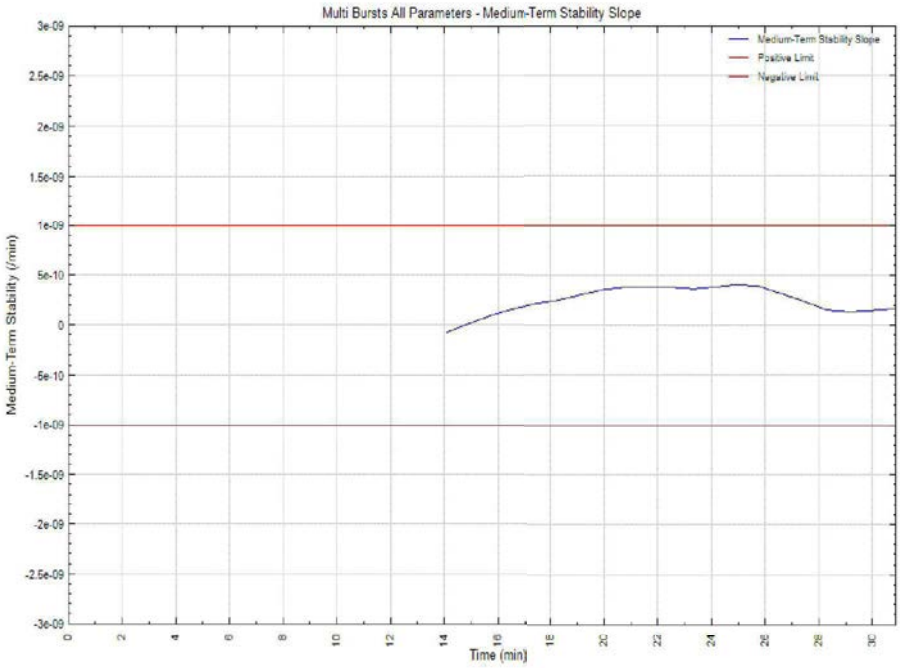
Nominal Frequency



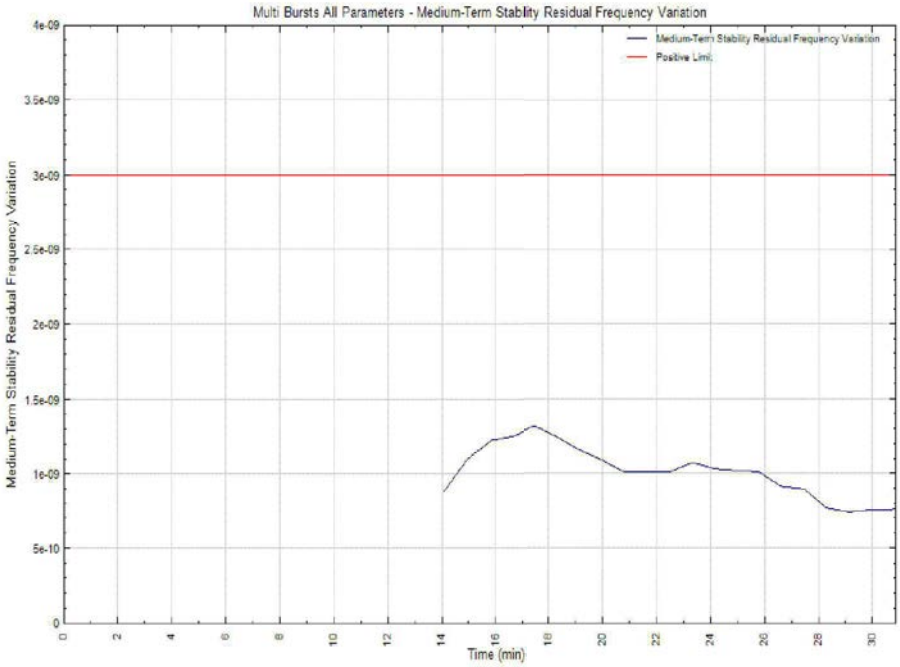
Short Term Stability



Medium Term Stability – Slope

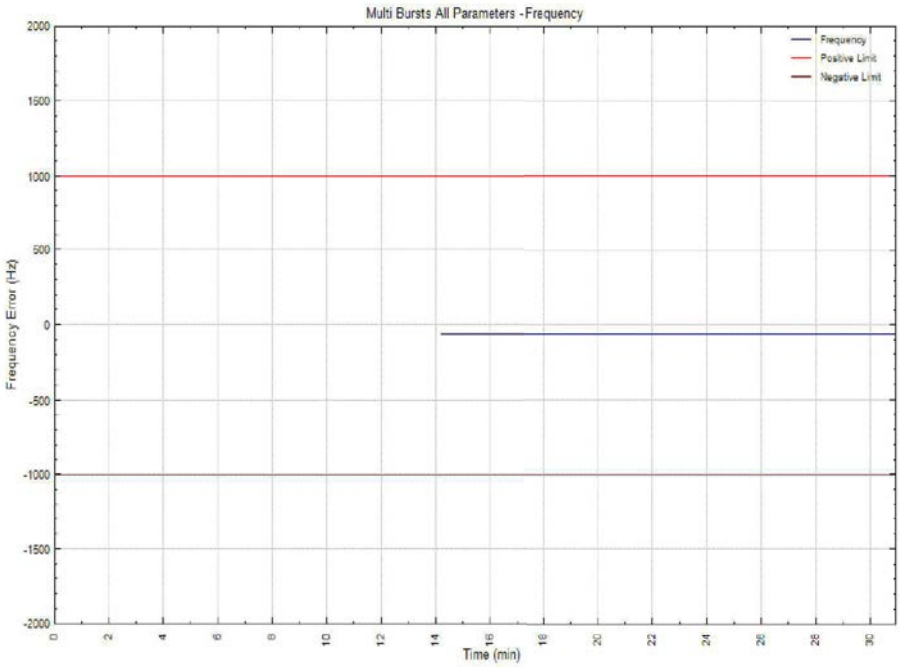


Medium Term Stability – Residual Frequency Variation

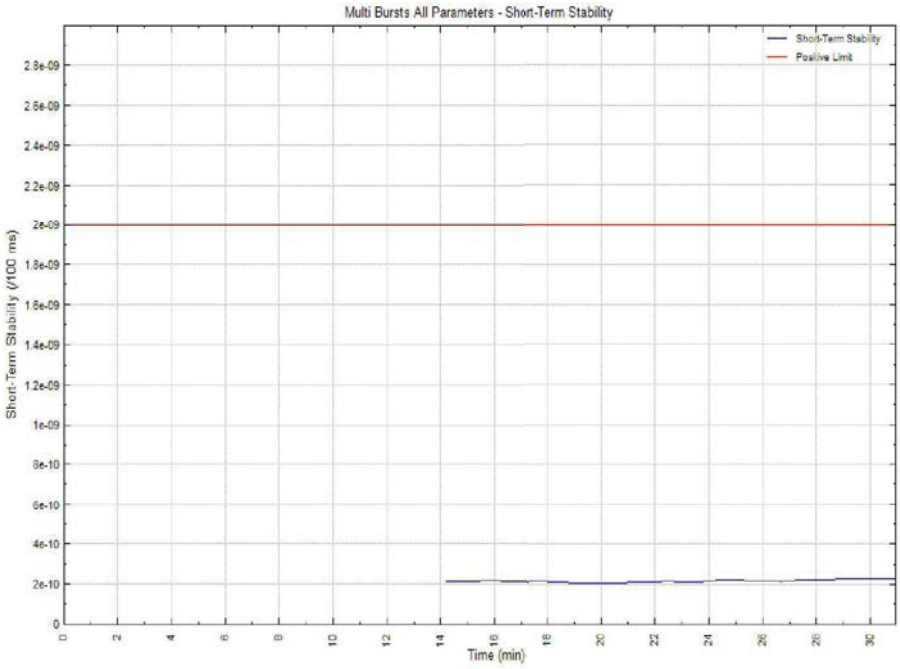


High Temperature (+55°C)

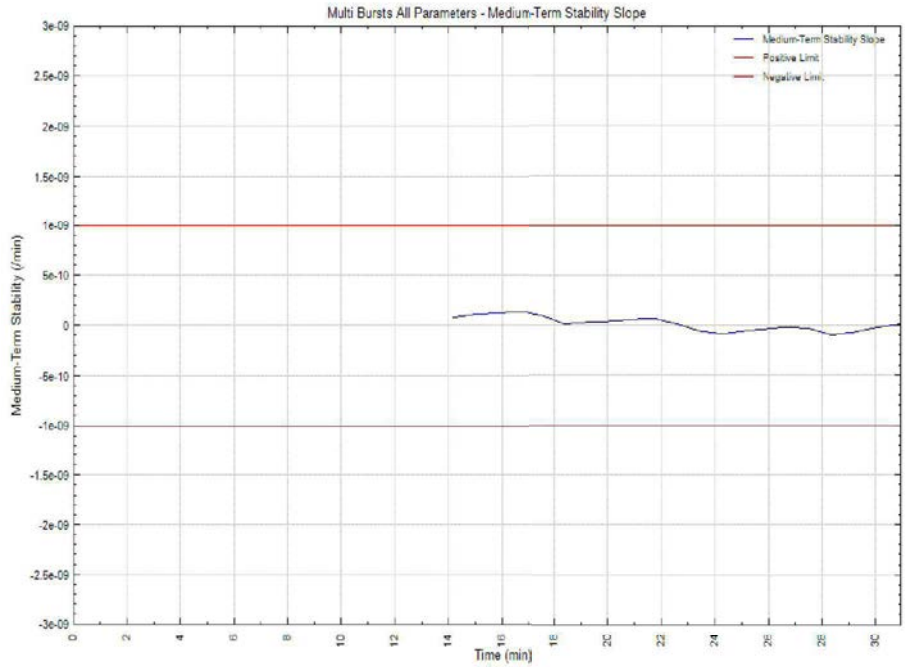
Nominal Frequency



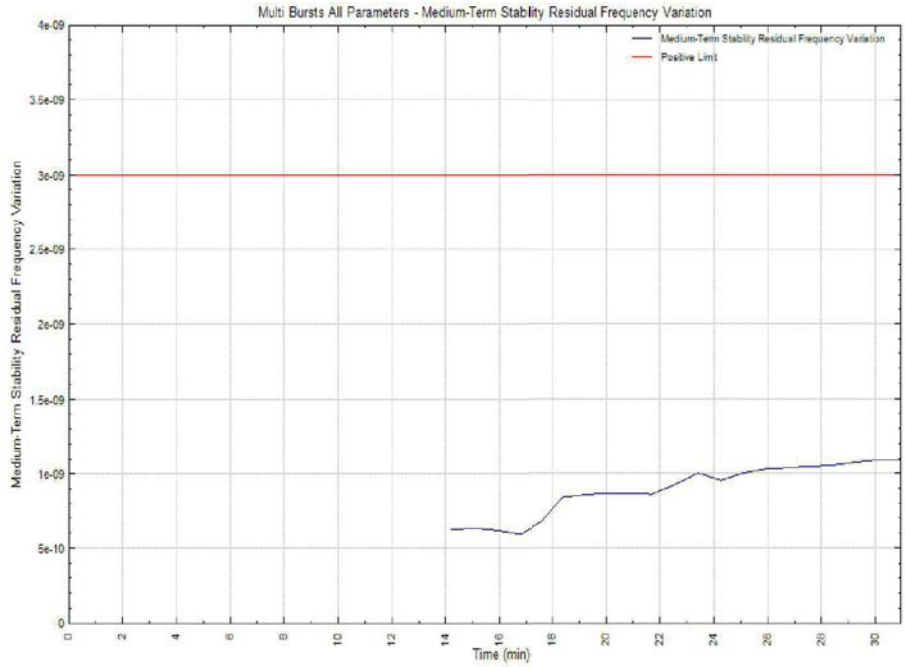
Short Term Stability



Medium Term Stability – Slope



Medium Term Stability – Residual Frequency Variation



Summary

The EUT complies with clause A.3.2.1 of Cospas-Sarsat T.007.

2.5 SPURIOUS EMISSIONS INTO 50 OHMS

2.5.1 Specification

Cospas-Sarsat T.007, Clause A.2.1 (f)

2.5.2 Equipment Under Test and Modification State

EPIRB3 Pro S/N: TA000004 - Modification State 1 (-20°C and +55°C)
EPIRB3 Pro S/N: TA000021 - Modification State 2 (Ambient Only)

2.5.3 Date of Test

16 March 2022, 17 March 2022 & 03 May 2022

2.5.4 Test Equipment Used

The major items of test equipment used for the above tests are identified in Section 4.1.

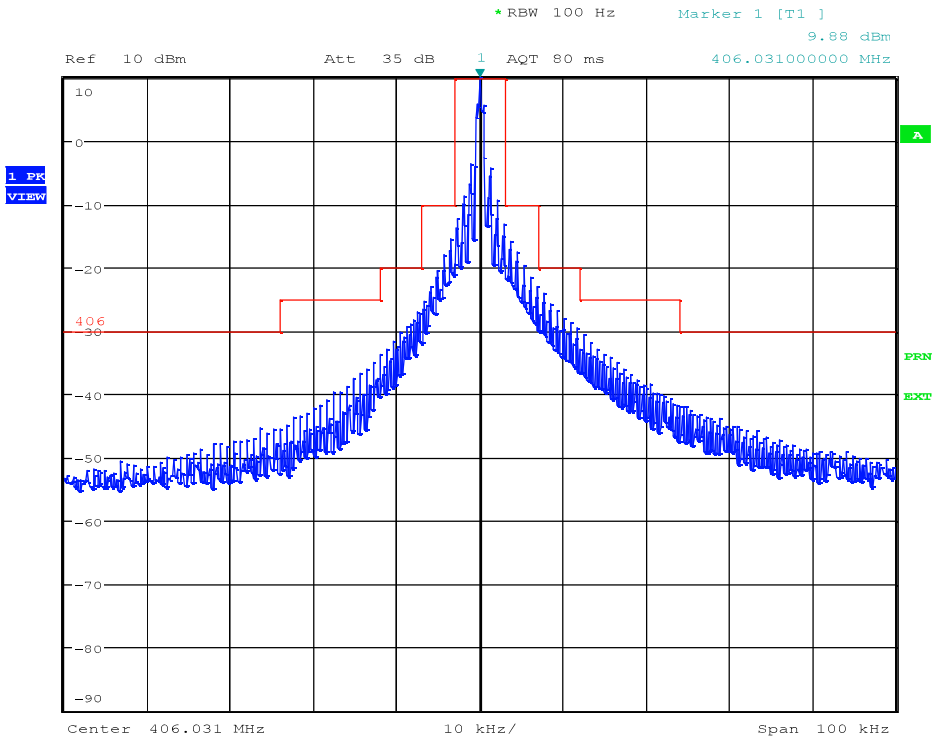
2.5.5 Laboratory Environmental Conditions

Ambient Temperature 24.3°C
Relative Humidity 33.6%

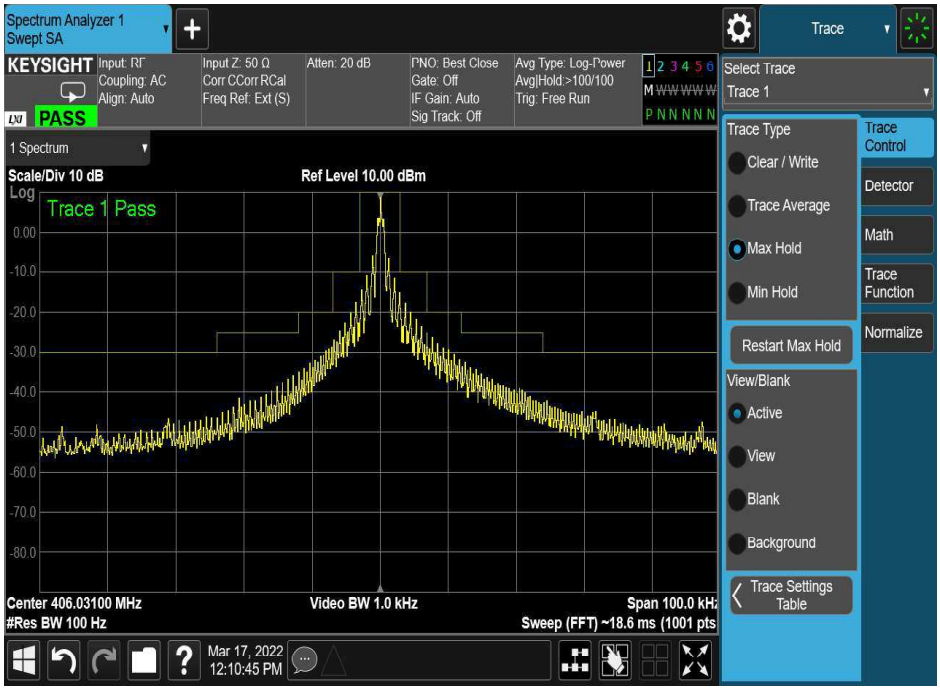
2.5.6 Test Results

Test Duration: 30 minutes
No. of bursts: 38

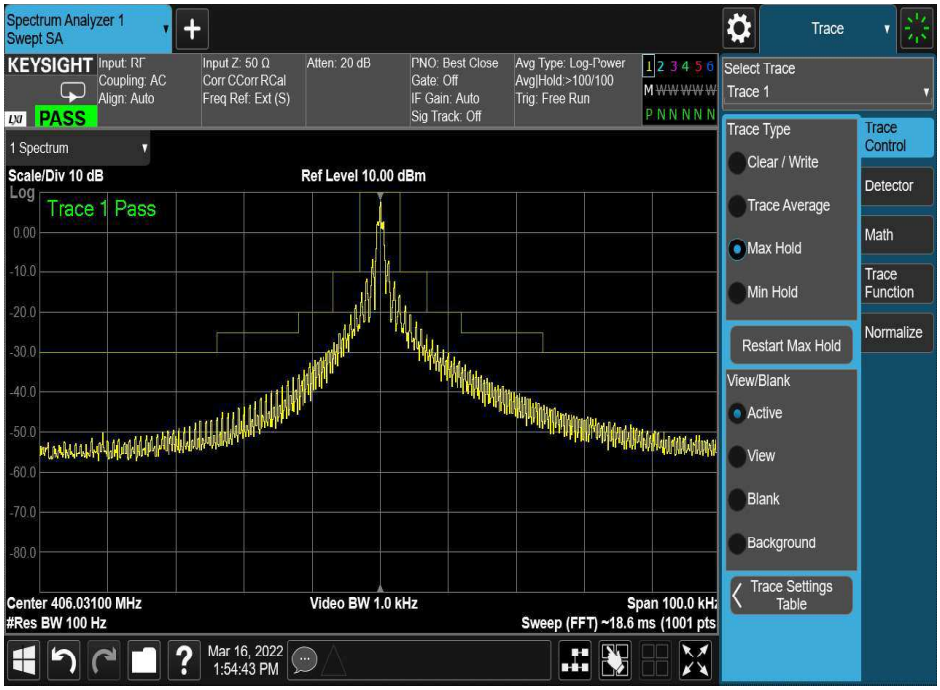
Ambient Temperature



Low Temperature (-20°C)



High Temperature (+55°C)



Summary

The EUT complies with clause A.3.2.2.4 of Cospas-Sarsat T.007.

2.6 406 MHZ VSWR CHECK

2.6.1 Specification

Cospas-Sarsat T.007, Clause A.2.1 (g)

2.6.2 Equipment Under Test and Modification State

EPIRB3 Pro S/N: TA000004 - Modification State 1

2.6.3 Date of Test

15 March 2022, 16 March 2022 & 17 March 2022

2.6.4 Test Equipment Used

The major items of test equipment used for the above tests are identified in Section 4.1.

2.6.5 Laboratory Environmental Conditions

Ambient Temperature 24.2 - 25.4°C
Relative Humidity 28.2 - 38.7%

2.6.6 Test Results

Test Duration: 30 minutes
No. of bursts: 38

Ambient Temperature

Burst 1
Decoded Beacon Message

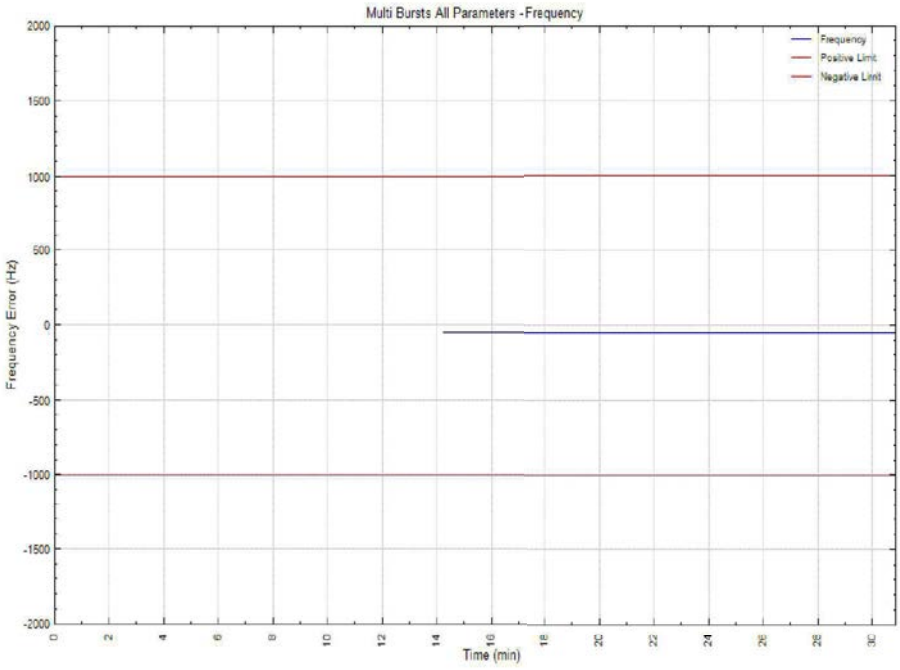
Hexadecimal code: **FFFE2F8C9DFE7018DFEFF8129DF861F0FABE**

The code consists of 36 hexadecimal characters representing a first generation beacon message with the format flag set to Long including bit and frame synchronization pattern prefix (24 bits) as defined by T.001 Issue 4 - Rev.6.

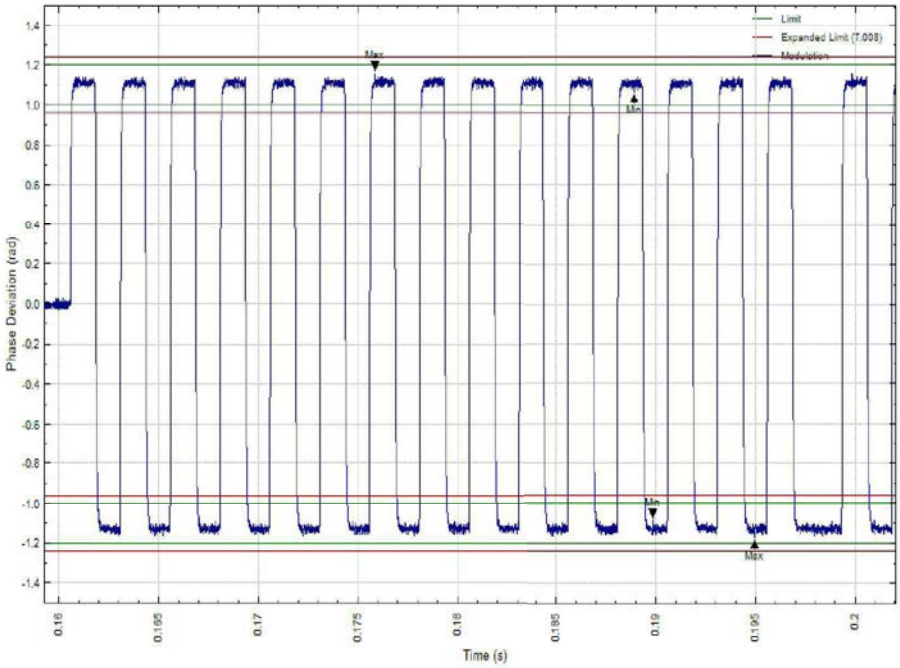
Unique identifier:
193BFCE031BFDFF

Binary Range	Binary Content	Field Name	Decoded Value
1-15	111111111111111	Bit-synchronization pattern consisting of "1"s shall occupy the first 15-bit positions	True
16-24	000101111	Frame Synchronization Pattern	Normal beacon operation
25	1	Format Flag	Long Message
26	0	Protocol Flag	Location, further information provided in "Protocol Code"
27-36	0011001001	Country code:	Albania - 201
		For associated SAR Points of Contact (SPOC) related to Albania - 201 :	Search Contact list here
37-40	1101	Protocol Code	RLS Location Protocol
41-42	11	Beacon type	RLS Test Location
43-46	1111	Identification type	RLS protocol coded with MMSI last 6 digits
47-66	10011100000001100011	Last 6 digits MMSI	639075
67-75	011111111	Latitude	Default - no location (Default - no location)
76-85	0111111111	Longitude	Default - no location (Default - no location)
86-106	00000010010100111011	BCH-1 error correcting code	BCH-1 code in message matches the recalculated BCH-1 from the PDF-1 field
107	1	Encoded position source	Encoded position data is provided by an internal navigation device
108	1	121.5 Mhz Homing Device	Included in beacon
109	1	Beacon capability to process and automatically generated RLM Type-1	Capable to process an automatically generated RLM Type-1
110	0	Beacon capability to process a manually generated RLM Type-1 RLM Type-2	Not capable to process a manually generated RLM Type-2
111	0	Beacon Feedback on receipt of RLM Type-1	RLM Type-1 (automatic) not received by this beacon
112	0	Beacon Feedback on receipt of RLM Type-2	RLM Type-2 (manual) not received by this beacon
113-114	01	RLS Provider Identification	GALILEO Return Link Service Provider
115-123	100001111	Latitude offset	Default value
124-132	100001111	Longitude offset	Default value
133-144	101010111110	BCH-2 error correcting code	BCH-2 code in message matches the recalculated BCH-2 from the PDF-2 field

Frequency Plot



Modulation Plot



Low Temperature (-20°C)

Burst 1
Decoded Beacon Message

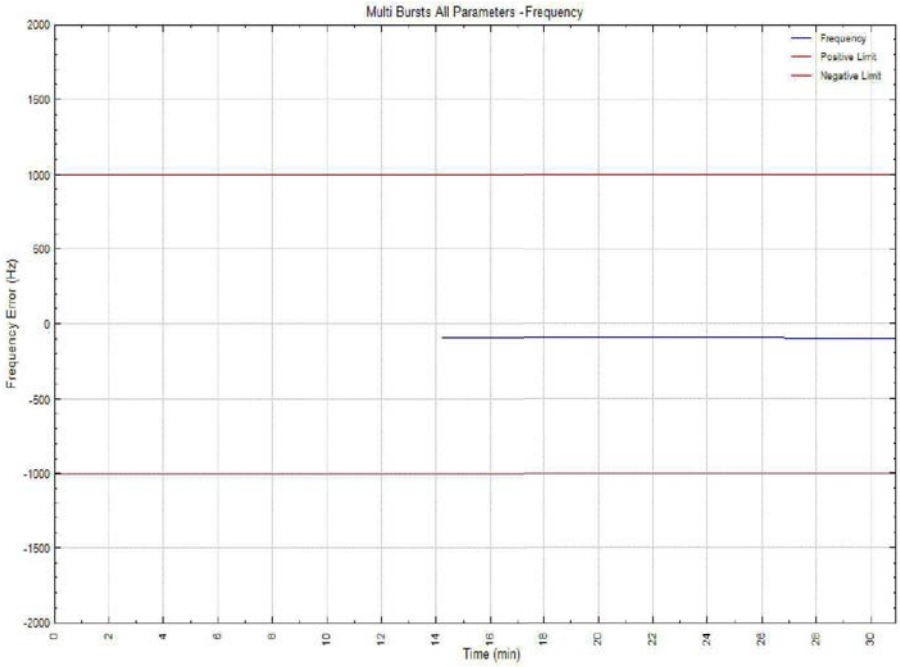
Hexadecimal code: **FFFE2F8C9DFE7018DFEFF8129DF861F0FABE**

The code consists of 36 hexadecimal characters representing a first generation beacon message with the format flag set to Long including bit and frame synchronization pattern prefix (24 bits) as defined by T.001 Issue 4 - Rev.6.

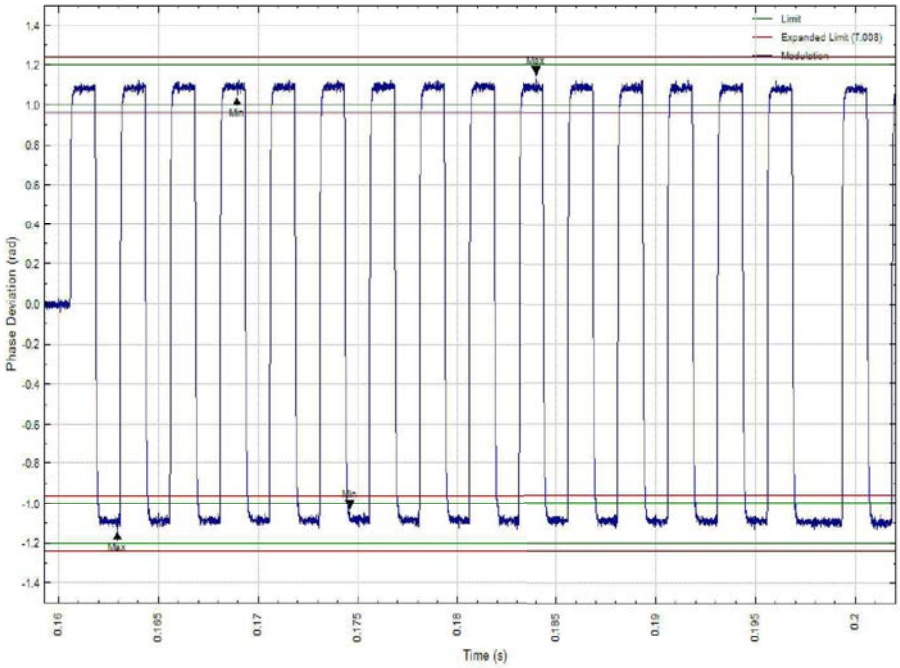
Unique identifier:
193BFCE031BFDFF

Binary Range	Binary Content	Field Name	Decoded Value
1-15	111111111111111	Bit-synchronization pattern consisting of "1"s shall occupy the first 15-bit positions	True
16-24	000101111	Frame Synchronization Pattern	Normal beacon operation
25	1	Format Flag	Long Message
26	0	Protocol Flag	Location, further information provided in "Protocol Code"
27-36	0011001001	Country code:	Albania - 201
		For associated SAR Points of Contact (SPOC) related to Albania - 201 :	Search Contact list here
37-40	1101	Protocol Code	RLS Location Protocol
41-42	11	Beacon type	RLS Test Location
43-46	1111	Identification type	RLS protocol coded with MMSI last 6 digits
47-66	10011100000001100011	Last 6 digits MMSI	639075
67-75	011111111	Latitude	Default - no location (Default - no location)
76-85	0111111111	Longitude	Default - no location (Default - no location)
86-106	00000010010100111011	BCH-1 error correcting code	BCH-1 code in message matches the recalculated BCH-1 from the PDF-1 field
107	1	Encoded position source	Encoded position data is provided by an internal navigation device
108	1	121.5 Mhz Homing Device	Included in beacon
109	1	Beacon capability to process and automatically generated RLM Type-1	Capable to process an automatically generated RLM Type-1
110	0	Beacon capability to process a manually generated RLM Type-1 RLM Type-2	Not capable to process a manually generated RLM Type-2
111	0	Beacon Feedback on receipt of RLM Type-1	RLM Type-1 (automatic) not received by this beacon
112	0	Beacon Feedback on receipt of RLM Type-2	RLM Type-2 (manual) not received by this beacon
113-114	01	RLS Provider Identification	GALILEO Return Link Service Provider
115-123	100001111	Latitude offset	Default value
124-132	100001111	Longitude offset	Default value
133-144	101010111110	BCH-2 error correcting code	BCH-2 code in message matches the recalculated BCH-2 from the PDF-2 field

Frequency Plot



Modulation Plot



High Temperature (+55°C)

Burst 1
Decoded Beacon Message

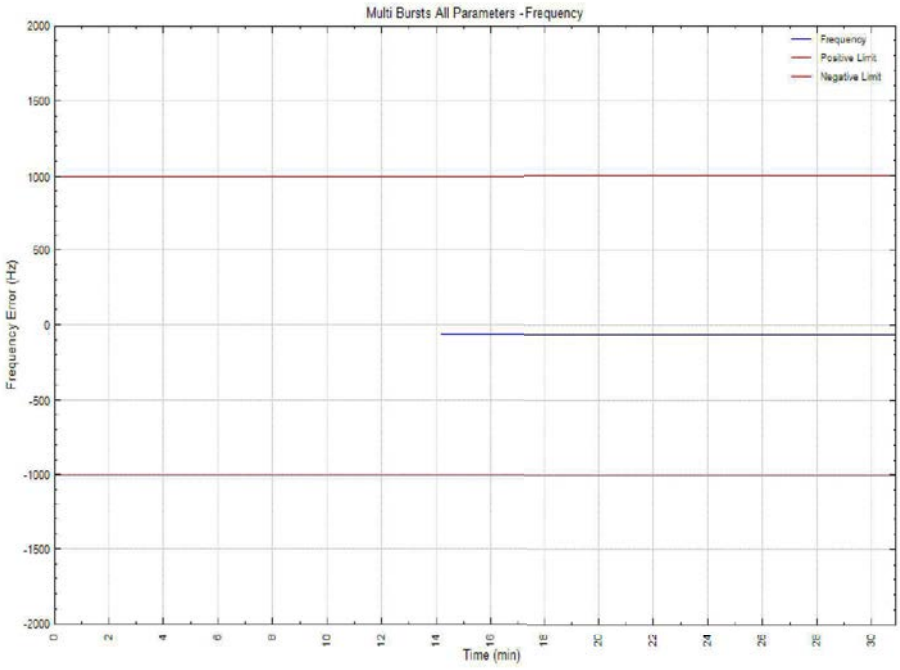
Hexadecimal code: **FFFE2F8C9DFE7018DFEFF8129DF861F0FABE**

The code consists of 36 hexadecimal characters representing a first generation beacon message with the format flag set to Long including bit and frame synchronization pattern prefix (24 bits) as defined by T.001 Issue 4 - Rev.6.

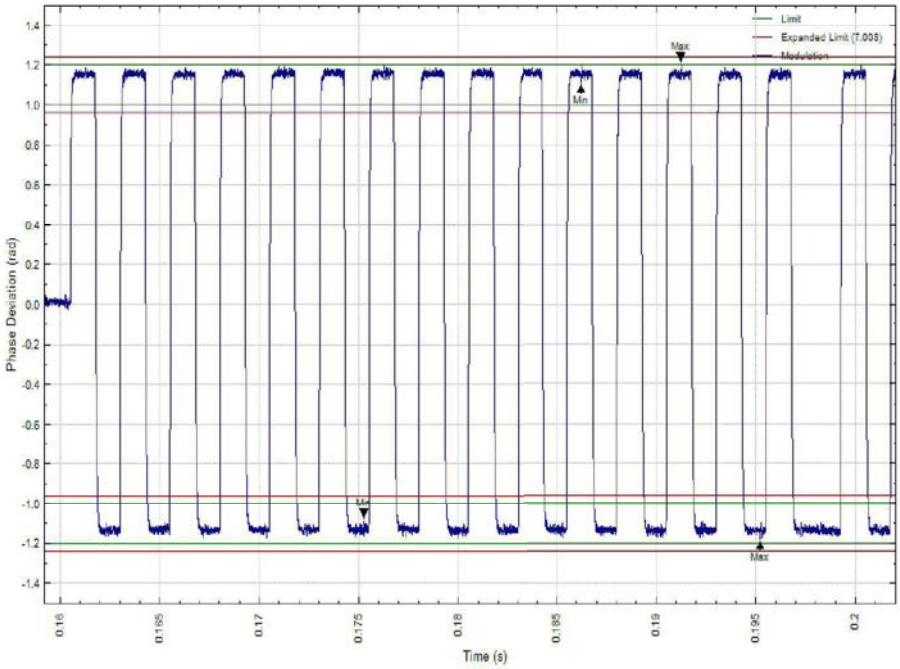
Unique identifier:
193BFCE031BFDFF

Binary Range	Binary Content	Field Name	Decoded Value
1-15	111111111111111	Bit-synchronization pattern consisting of "1"s shall occupy the first 15-bit positions	True
16-24	000101111	Frame Synchronization Pattern	Normal beacon operation
25	1	Format Flag	Long Message
26	0	Protocol Flag	Location, further information provided in "Protocol Code"
27-36	0011001001	Country code:	Albania - 201
		For associated SAR Points of Contact (SPOC) related to Albania - 201 :	Search Contact list here
37-40	1101	Protocol Code	RLS Location Protocol
41-42	11	Beacon type	RLS Test Location
43-46	1111	Identification type	RLS protocol coded with MMSI last 6 digits
47-66	10011100000001100011	Last 6 digits MMSI	639075
67-75	011111111	Latitude	Default - no location (Default - no location)
76-85	0111111111	Longitude	Default - no location (Default - no location)
86-106	00000010010100111011	BCH-1 error correcting code	BCH-1 code in message matches the recalculated BCH-1 from the PDF-1 field
107	1	Encoded position source	Encoded position data is provided by an internal navigation device
108	1	121.5 Mhz Homing Device	Included in beacon
109	1	Beacon capability to process and automatically generated RLM Type-1	Capable to process an automatically generated RLM Type-1
110	0	Beacon capability to process a manually generated RLM Type-1 RLM Type-2	Not capable to process a manually generated RLM Type-2
111	0	Beacon Feedback on receipt of RLM Type-1	RLM Type-1 (automatic) not received by this beacon
112	0	Beacon Feedback on receipt of RLM Type-2	RLM Type-2 (manual) not received by this beacon
113-114	01	RLS Provider Identification	GALILEO Return Link Service Provider
115-123	100001111	Latitude offset	Default value
124-132	100001111	Longitude offset	Default value
133-144	101010111110	BCH-2 error correcting code	BCH-2 code in message matches the recalculated BCH-2 from the PDF-2 field

Frequency Plot



Modulation Plot



Summary

The EUT fails to comply* with clause A.3.3 of Cospas-Sarsat T.007.

*At maximum temperature, the positive and negative phase deviation falls outside the limits in T.007. However, it is within the Test Facility limits stated in T.008.

2.7 SELF-TEST MODES

2.7.1 Specification

Cospas-Sarsat T.007, Clause A.2.1 (h)

2.7.2 Equipment Under Test and Modification State

EPIRB3 Pro S/N: TA000004 - Modification State 1 (-20°C and +55°C)
EPIRB3 Pro S/N: TA000004 - Modification State 1 (PIE test – Ambient)
EPIRB3 Pro S/N: TA000021 - Modification State 2 (Ambient Only)

2.7.3 Date of Test

16 March 2022 & 17 March 2022 & 03 May 2022

2.7.4 Test Equipment Used

The major items of test equipment used for the above tests are identified in Section 4.1.

2.7.5 Laboratory Environmental Conditions

Ambient Temperature 24.0 - 26.2°C
Relative Humidity 28.0 - 39.1%

2.7.6 Test Results

Note: Self-test at ambient temperature was carried out with navigation data applied. The EUT was activated and allowed to obtain a fix. It was then deactivated and a Self-test was performed to show the EUT encoded default values. This is shown from the decoded message below.

Self-test Mode

Ambient Temperature

Burst 1
Decoded Beacon Message

Hexadecimal code: **FFFE2F8C9DFE7018CCF024AD44F84ECA2A3C**

The code consists of 36 hexadecimal characters representing a first generation beacon message with the format flag set to Long including bit and frame synchronization pattern prefix (24 bits) as defined by T.001 Issue 4 - Rev.6.

Unique identifier:
193BFCE031BFDFF

Binary Range	Binary Content	Field Name	Decoded Value
1-15	111111111111111	Dit-synchronization pattern consisting of "1"s shall occupy the first 15-bit positions	True
16-24	000101111	Frame Synchronization Pattern	Normal beacon operation
25	1	Format Flag	Long Message
26	0	Protocol Flag	Location, further information provided in "Protocol Code"
27-36	0011001001	Country code:	Albania - 201
		For associated SAR Points of Contact (SPOC) related to Albania - 201 :	Search Contact list here
37-40	1101	Protocol Code	RLS Location Protocol
41-42	11	Beacon type	RLS Test Location
43-46	1111	Identification type	RLS protocol coded with MMSI last 6 digits
47-66	10011100000001100011	Last 6 digits MMSI	639075
67-75	001100111	Latitude	51.5 Degrees North (51.5)
76-85	1000000100	Longitude	2.0 Degrees West (-2.0)
86-106	10010101101010001001	BCH-1 error correcting code	BCH-1 code in message matches the recalculated BCH-1 from the PDF-1 field
107	1	Encoded position source	Encoded position data is provided by an internal navigation device
108	1	121.5 Mhz Homing Device	Included in beacon
109	1	Beacon capability to process and automatically generated RLM Type-1	Capable to process an automatically generated RLM Type-1
110	0	Beacon capability to process a manually generated RLM Type-1 RLM Type-2	Not capable to process a manually generated RLM Type-2
111	0	Beacon Feedback on receipt of RLM Type-1	RLM Type-1 (automatic) not received by this beacon
112	0	Beacon Feedback on receipt of RLM Type-2	RLM Type-2 (manual) not received by this beacon
113-114	01	RLS Provider Identification	GALILEO Return Link Service Provider
115-123	001110110	Latitude offset	7.0 minutes 24.0 seconds (negative)
124-132	010100010	Longitude offset	10.0 minutes 8.0 seconds (negative)
133-144	101000111100	BCH-2 error correcting code	BCH-2 code in message matches the recalculated BCH-2 from the PDF-2 field
		Composite location	51.377 -1.831

Burst 3
Decoded Beacon Message

Hexadecimal code: **FFFED08C9DFE7018DFEFF8129DF861F0FABE**

The code consists of 36 hexadecimal characters representing a first generation beacon message with the format flag set to Long including bit and frame synchronization pattern prefix (24 bits) as defined by T.001 Issue 4 - Rev.6.

Unique identifier:
193BFCE031BFDFF

Binary Range	Binary Content	Field Name	Decoded Value
1-15	111111111111111	Bit-synchronization pattern consisting of "1"s shall occupy the first 15-bit positions	True
16-24	011010000	Frame Synchronization Pattern	Test protocol message coded for non-operational use
25	1	Format Flag	Long Message
26	0	Protocol Flag	Location, further information provided in "Protocol Code"
27-36	0011001001	Country code:	Albania - 201
		For associated SAR Points of Contact (SPOC) related to Albania - 201 :	Search Contact list here
37-40	1101	Protocol Code	RLS Location Protocol
41-42	11	Beacon type	RLS Test Location
43-46	1111	Identification type	RLS protocol coded with MMSI last 6 digits
47-66	10011100000001100011	Last 6 digits MMSI	639075
67-75	011111111	Latitude	Default - no location (Default - no location)
76-85	0111111111	Longitude	Default - no location (Default - no location)
86-106	00000010010100111011	BCH-1 error correcting code	BCH-1 code in message matches the recalculated BCH-1 from the PDF-1 field
107	1	Encoded position source	Encoded position data is provided by an internal navigation device
108	1	121.5 Mhz Homing Device	Included in beacon
109	1	Beacon capability to process and automatically generated RLM Type-1	Capable to process an automatically generated RLM Type-1
110	0	Beacon capability to process a manually generated RLM Type-1 RLM Type-2	Not capable to process a manually generated RLM Type-2
111	0	Beacon Feedback on receipt of RLM Type-1	RLM Type-1 (automatic) not received by this beacon
112	0	Beacon Feedback on receipt of RLM Type-2	RLM Type-2 (manual) not received by this beacon
113-114	01	RLS Provider Identification	GALILEO Return Link Service Provider
115-123	100001111	Latitude offset	Default value
124-132	100001111	Longitude offset	Default value
133-144	101010111110	BCH-2 error correcting code	BCH-2 code in message matches the recalculated BCH-2 from the PDF-2 field

Note: Self-test at ambient temperature carried out with navigation data applied.

Low Temperature (-20°C)

Burst 1
Decoded Beacon Message

Hexadecimal code: **FFFED08C9DFE7018DFEFF8129DF861F0FABE**

The code consists of 36 hexadecimal characters representing a first generation beacon message with the format flag set to Long including bit and frame synchronization pattern prefix (24 bits) as defined by T.001 Issue 4 - Rev.6.

Unique identifier:
193BFCE031BFDFF

Binary Range	Binary Content	Field Name	Decoded Value
1-15	111111111111111	Bit-synchronization pattern consisting of "1"s shall occupy the first 15-bit positions	True
16-24	011010000	Frame Synchronization Pattern	Test protocol message coded for non-operational use
25	1	Format Flag	Long Message
26	0	Protocol Flag	Location, further information provided in "Protocol Code"
27-36	0011001001	Country code:	Albania - 201
		For associated SAR Points of Contact (SPOC) related to Albania - 201 :	Search Contact list here
37-40	1101	Protocol Code	RLS Location Protocol
41-42	11	Beacon type	RLS Test Location
43-46	1111	Identification type	RLS protocol coded with MMSI last 6 digits
47-66	10011100000001100011	Last 6 digits MMSI	639075
67-75	011111111	Latitude	Default - no location (Default - no location)
76-85	0111111111	Longitude	Default - no location (Default - no location)
86-106	00000010010100111011	BCH-1 error correcting code	BCH-1 code in message matches the recalculated BCH-1 from the PDF-1 field
107	1	Encoded position source	Encoded position data is provided by an internal navigation device
108	1	121.5 Mhz Homing Device	Included in beacon
109	1	Beacon capability to process and automatically generated RLM Type-1	Capable to process an automatically generated RLM Type-1
110	0	Beacon capability to process a manually generated RLM Type-1 RLM Type-2	Not capable to process a manually generated RLM Type-2
111	0	Beacon Feedback on receipt of RLM Type-1	RLM Type-1 (automatic) not received by this beacon
112	0	Beacon Feedback on receipt of RLM Type-2	RLM Type-2 (manual) not received by this beacon
113-114	01	RLS Provider Identification	GALILEO Return Link Service Provider
115-123	100001111	Latitude offset	Default value
124-132	100001111	Longitude offset	Default value
133-144	101010111110	BCH-2 error correcting code	BCH-2 code in message matches the recalculated BCH-2 from the PDF-2 field

High Temperature (+55°C)

Burst 1
Decoded Beacon Message

Hexadecimal code: **FFFED08C9DFE7018DFEFF8129DF861F0FABE**

The code consists of 36 hexadecimal characters representing a first generation beacon message with the format flag set to Long including bit and frame synchronization pattern prefix (24 bits) as defined by T.001 Issue 4 - Rev.6.

Unique identifier:
193BFCE031BFDFF

Binary Range	Binary Content	Field Name	Decoded Value
1-15	111111111111111	Bit-synchronization pattern consisting of "1"s shall occupy the first 15-bit positions	True
16-24	011010000	Frame Synchronization Pattern	Test protocol message coded for non-operational use
25	1	Format Flag	Long Message
26	0	Protocol Flag	Location, further information provided in "Protocol Code"
27-36	0011001001	Country code:	Albania - 201
		For associated SAR Points of Contact (SPOC) related to Albania - 201 :	Search Contact list here
37-40	1101	Protocol Code	RLS Location Protocol
41-42	11	Beacon type	RLS Test Location
43-46	1111	Identification type	RLS protocol coded with MMSI last 6 digits
47-66	10011100000001100011	Last 6 digits MMSI	639075
67-75	011111111	Latitude	Default - no location (Default - no location)
76-85	0111111111	Longitude	Default - no location (Default - no location)
86-106	00000010010100111011	BCH-1 error correcting code	BCH-1 code in message matches the recalculated BCH-1 from the PDF-1 field
107	1	Encoded position source	Encoded position data is provided by an internal navigation device
108	1	121.5 Mhz Homing Device	Included in beacon
109	1	Beacon capability to process and automatically generated RLM Type-1	Capable to process an automatically generated RLM Type-1
110	0	Beacon capability to process a manually generated RLM Type-1 RLM Type-2	Not capable to process a manually generated RLM Type-2
111	0	Beacon Feedback on receipt of RLM Type-1	RLM Type-1 (automatic) not received by this beacon
112	0	Beacon Feedback on receipt of RLM Type-2	RLM Type-2 (manual) not received by this beacon
113-114	01	RLS Provider Identification	GALILEO Return Link Service Provider
115-123	100001111	Latitude offset	Default value
124-132	100001111	Longitude offset	Default value
133-144	101010111110	BCH-2 error correcting code	BCH-2 code in message matches the recalculated BCH-2 from the PDF-2 field

Table F-E.3: Self-test Mode Actions and Indications

No.	Action/Indication	Time-stamp (HH:MM:SS)	Description of action/indication	Duration of action/indication (sec)	Notes
1	Self-Test mode initiation (distinct action)	00:00:00	Hold the 'Test' button in until the red LED starts flashing, then release	3 Sec	
2	Distinct indication of the Self-test initiation	00:00:04	LED flashes white	1 Sec	
3	Self-test single burst transmission	00:00:05		520mS	Observed on Spectrum Analyser
4	Self-test message default values	00:00:05	Self-test message structure and bit values confirmed correct		Decoded using TUV test system
5	Distinct indication of RF transmission	00:00:05	None	1 Sec 1 Sec 1 sec	121.5 MHz AIS 406 MHz
6	Distinct indication of the Self-test PASS result	00:00:06	A series of Blue LED flashes (if RLS) or Green LED flashes (if NON RLS)	Up to 10 Sec	Dependent on number of flashes. See manufacturers user manual for description of self-test indications.
7	Distinct indication of the Self-test FAIL result	00:00:06	A series of Magenta (if RLS) or Orange (if non RLS) LED flashes	Up to 10 Sec	Dependent on number of flashes. See manufacturers user manual for description of self-test indications.
8	Distinct indication of Insufficient Battery Energy	00:00:06	A series of Magenta (if RLS) or Orange (if non RLS) LED flashes	Up to 10 Sec	Dependent on number of flashes. See manufacturers user manual for description of self-test indications.
9	Automatic termination of the Self-test mode, irrespectively of the switch position		'Test' button held in	21 seconds	If the 'Test' button is held in, the EUT turns off. The EUT ceases to draw residual current after this. See battery current measurements for details.
10	Duration of the Self-test mode				The potential maximum duration that the manufacturer has declared is 16s but it is dependent on the number of flashes. See manufacturers user manual for description of self-test indications.

Testing Insufficient Battery Energy

Table F-E.5: Indication of Insufficient Battery Energy

Parameter	Units	Declared by beacon manufacturer	Verified and evaluated by accepted test facility	Notes
Minimum duration of continuous operation (**C_{CO}**)	hours	50*	-	**C_{CO}** is declared in Annex G as "Operating Lifetime". **C_{CO}** is required for the test. Minimum duration of continuous operation (**C_{CO}**)
Full Battery Pack Capacity **(C_{BP})**	hours	105.26	-	If needed to calculate **C_{SP-AMB}**
Battery Pre-Operational Losses **(C_{PO})**	hours	9.32	-	Corresponds to **L_{CDC}**, as defined in the Table F- E.2
Spare Battery Capacity at ambient temperature **(C_{SP-AMB})**	hours	45.94	-	**C_{SP-AMB}** is required for the test, and shall be defined by testing (see Footnote 4 to section A.3.6.2.2), or by calculation, as follows: **CSP-AMB = CBP – (CPO + CCO)**
Criteria and conditions to trigger **PIE** indication		2 Hour operation **See description below	-	Description of PIE criteria and conditions to be met to trigger PIE indication. Use a separate sheet if needed
Step-1: battery pack discharge	hours	-	1.5h	Battery discharge shall correspond to: **C_{PO} - 30 minutes,** or the value declared by the beacon manufacturer less 30 minutes
Step-1: beacon conditions (if applicable)		-	The battery was discharged in the EUT for 1.5 hours	Description of conditions recreated during the Step-1 for which the PIE criteria is not met
Step-1: observations of self-test indication		-	The LED indicator flashes blue once and then repeats. If RLS is not enabled the LED indicator will flash green once and then repeats.	Test facility observations of self-test indication: time, duration, type of indication
Step-2: battery pack discharge	hours	-	The battery was discharged in the EUT for a further 1 hour	Total battery discharge shall correspond to: **C_{PO} + C_{SP-AMB} + 30 minutes** or the value declared by the beacon manufacturer plus 30 minutes
Step-2: beacon conditions (if applicable)	-	-	Step-1: battery pack discharge + Step-2: battery pack discharge = 2.5h	Description of conditions recreated during the Step-2 for which the PIE criteria is met
Step-2: observations of distinct PIE indication		-	The LED indicator flashes magenta for a series fo flashes and then repeats. If RLS is not enabled the LED indicator flashes amber for a series of flashes and then repeats.	Test facility observations of PIE indication: time, duration, type of indication

*CCO set to 50 hours as we provide for two hours of use before we tell the user the battery needs changing. This way even after two hours of use the product will still meet the operational requirement of 48 hours use.

**PIE Indication

For RLS protocol disabled, if the PIE criterion has been met the pass indication of the Self-Test shall change from a flashing Green LED to a flashing Amber LED.
For RLS protocol enabled, if the PIE criterion has been met the pass indication of the Self-Test shall change from a flashing Blue LED to a flashing Magenta LED.
For these criteria to be met the beacon must have been operated for 2 hours.
This operation time can be accumulated through Self-Testing, GNSS Self-Testing and activation.
The Amber or Magenta LED indicates that the beacon may not have sufficient capacity to last for 48 hours operation and the battery should be replaced.

GNSS Self-test mode

General

All duration measurements below include activation method time, i.e. they start from test switch press and include any “hold for x seconds” requirement and they end when all visual and audible activity appeared to cease.

All positional accuracy values below were calculated using the Haversine Formula; the Earth’s radius was taken as 6367 km.

Example decodes are shown only for RLS Location Protocol at ambient temperature, however all protocols and temperatures (High, Ambient, Low) were measured, decoded, and found to be compliant.

GNSS Self-test Observations

Parameter	Actual	Declared
GNSS Self-test count	60	60
GNSS Self-test maximum duration (s) incl. activation method	114	140
Indication of GNSS Self-test activation/completion	A GNSS self-test activation is activated by holding the TEST button in until the red LED stops flashing and becomes steady. It should then be released. If navigation data is detected, the LED will flash green a number of times as described below. If no navigation data is detected, the LED will flash red a number of times as described below. The number of flashes indicates the number of GNSS Self-Tests remaining, up to a maximum of 10 times. The test result will then be repeated after 2 seconds.	
Indication of GNSS Self-test count limit reached	If there are no tests remaining the LED will either flash green or red 13 times depending on whether the GNSS Self-Test was successful.	

Summary: GNSS Self-test with Valid Navigation Input

Protocol	RLS Location Protocol		
Temperature (°C)	-20	+22	+55
Frame sync verification	011010000	011010000	011010000
Format Flag (1 bit)	1	1	1
Single Radiated burst (ms)	520.097	519.492	520.124
Position data	P	P	P
Single burst verification	P	P	P
Actual duration (s) incl. activation method	56	70	64
Position Input Latitude	N 51° 22' 35”	N 50° 48’ 41”	N 51° 22' 35”
Position Input Longitude	W 1° 49' 50”	W 1° 37’ 25”	W 1° 49' 50”
Position Output Latitude	N 51° 22’ 36”	N 50° 48’ 44”	N 51° 22’ 36”
Position Output Longitude	W 1° 49’ 52”	W 1° 37’ 24”	W 1° 49’ 52”
Position Error (m)	74.6	80.3	74.6

Protocol	Standard Location Protocol		
Temperature (°C)	-20	+22	+55
Frame sync verification	011010000	011010000	011010000
Format Flag (1 bit)	1	1	1
Single Radiated burst (ms)	520.117	519.500	520.131
Position data	P	P	P
Single burst verification	P	P	P
Actual duration (s) incl. activation method	65	79	69
Position Input Latitude	N 51° 22' 35”	N 50° 48’ 41”	N 51° 22' 35”
Position Input Longitude	W 1° 49' 50”	W 1° 37’ 25”	W 1° 49' 50”
Position Output Latitude	N 51° 22’ 36”	N 50° 48’ 39.6”	N 51° 22’ 36”
Position Output Longitude	W 1° 49’ 52”	W 1° 37’ 22.8”	W 1° 49’ 52”
Position Error (m)	49.3	60.9	49.3

Summary: GNSS Self-test without Valid Navigation Input

Protocol	RLS Location Protocol		
Temperature (°C)	-20	+22	+55
Frame sync verification	N/A	N/A	N/A
Format Flag (1 bit)	N/A	N/A	N/A
Single Radiated burst (ms)	N/A	N/A	N/A
Default Position data	N/A	N/A	N/A
Single burst verification	N/A	N/A	N/A
Actual duration (s) incl. activation method	110	113	114

Protocol	Standard Location Protocol		
Temperature (°C)	-20	+22	+55
Frame sync verification	N/A	N/A	N/A
Format Flag (1 bit)	N/A	N/A	N/A
Single Radiated burst (ms)	N/A	N/A	N/A
Default Position data	N/A	N/A	N/A
Single burst verification	N/A	N/A	N/A
Actual duration (s) incl. activation method	108	113	113

Full Hex Messages	
RLS Protocol with Navigation data applied	
+55°C	FFFED08C9DFE7018CCF024AD44F84ECA2A3C
Ambient	FFFED08C9DFE7018CCD01C855BB856976D56
-20°C	FFFED08C9DFE7018CCF024AD44F84ECA2A3C
RLS Protocol without Navigation data applied	
+55°C	N/A
Ambient	N/A
-20°C	N/A
Standard Location Protocol with Navigation data applied	
+55°C	FFFED08C9EF9C06333A03ECA66771DA4D4D0
Ambient	FFFED08C9EF9C06332E0311EC7778EA76951
-20°C	FFFED08C9EF9C06333A03ECA66771DA4D4D0
Standard Location Protocol without Navigation data applied	
+55°C	N/A
Ambient	N/A
-20°C	N/A

Decoded Message for RLS Location Protocol at Ambient Temperature

Decoded Beacon Message

Hexadecimal code: **FFFED08C9DFE7018CCD01C855BB856976D56**

The code consists of 36 hexadecimal characters representing a first generation beacon message with the format flag set to Long including bit and frame synchronization pattern prefix (24 bits) as defined by T.001 Issue 4 - Rev.6.

Unique identifier:
193BFCE031BFDFF

Binary Range	Binary Content	Field Name	Decoded Value
1-15	111111111111111	Bit-synchronization pattern consisting of "1"s shall occupy the first 15-bit positions	True
16-24	011010000	Frame Synchronization Pattern	Test protocol message coded for non-operational use
25	1	Format Flag	Long Message
26	0	Protocol Flag	Location, further information provided in "Protocol Code"
27-36	0011001001	Country code:	Albania - 201
		For associated SAR Points of Contact (SPOC) related to Albania - 201 :	Search Contact list here
37-40	1101	Protocol Code	RLS Location Protocol
41-42	11	Beacon type	RLS Test Location
43-46	1111	Identification type	RLS protocol coded with MMSI last 6 digits
47-66	10011100000001100011	Last 6 digits MMSI	639075
67-75	001100110	Latitude	51.0 Degrees North (51.0)
76-85	1000000011	Longitude	1.5 Degrees West (-1.5)
86-106	10010000101010110110	BCH-1 error correcting code	BCH-1 code in message matches the recalculated BCH-1 from the PDF-1 field
107	1	Encoded position source	Encoded position data is provided by an internal navigation device
108	1	121.5 Mhz Homing Device	Included in beacon
109	1	Beacon capability to process and automatically generated RLM Type-1	Capable to process an automatically generated RLM Type-1
110	0	Beacon capability to process a manually generated RLM Type-1 RLM Type-2	Not capable to process a manually generated RLM Type-2
111	0	Beacon Feedback on receipt of RLM Type-1	RLM Type-1 (automatic) not received by this beacon
112	0	Beacon Feedback on receipt of RLM Type-2	RLM Type-2 (manual) not received by this beacon
113-114	01	RLS Provider Identification	GALILEO Return Link Service Provider
115-123	010110100	Latitude offset	11.0 minutes 16.0 seconds (negative)
124-132	101110110	Longitude offset	7.0 minutes 24.0 seconds (positive)
133-144	110101010110	BCH-2 error correcting code	BCH-2 code in message matches the recalculated BCH-2 from the PDF-2 field
		Composite location	50.812 -1.623

Table F-E.4: GNSS Self-test Mode Actions and Indications

No.	Action/Indication	Time-stamp (HH:MM:SS)	Description of action/indication	Duration of action/indication (sec)	Notes
1	GNSS Self-test mode initiation (distinct action)	00:00:00	Hold the 'TEST' button in and when the red LED stops flashing and becomes steady, release the 'TEST' button	7 sec	
2	Distinct indication of the GNSS Self-test initiation	00:00:07	The LED will flash green once and then goes into it's LED sequence	1 sec	
3	GNSS Self-test single burst transmission			520ms (with Nav input)	Observed on spectrum analyser
4	GNSS Self-test message position encoding		GNSS self-test message structure and bit values confirmed correct	1 sec (with Nav input)	Decode using TUV test system
5	Distinct indication of the GNSS Self-test PASS result	00:00:55	The LED flashes green to indicate a pass result and how many GNSS Self-Tests remain	15 sec	406 MHz burst with navigation acknowledgment
6	Distinct indication of the GNSS Self-test FAIL result	00:01:39	The LED flashes red twice and then goes into it's normal LED sequence for a failed result	14 sec	
7	Distinct indication that the manufacturer-declared limited number of GNSS Self-tests is attained				The LED will either flash green or red 13 times depending on whether the GNSS Self-Test was successful.
8	Automatic termination of the Self-test mode, irrespectively of the switch position		'Test' button held in	21 sec	If the 'Test' button is held in, the EUT turns off. The EUT ceases to draw residual current after this. See battery current measurements for details.
9	Duration of the GNSS Self-test mode	00:01:10 (with Nav input) 00:01:54 (without Nav input)			

Summary

The EUT complies with clause A.3.6 of Cospas-Sarsat T.007.

2.8 THERMAL SHOCK

2.8.1 Specification

Cospas-Sarsat T.007, Clause A.2.2

2.8.2 Equipment Under Test and Modification State

EPIRB3 Pro S/N: TA000005 - Modification State 1

2.8.3 Date of Test

23 March 2022

2.8.4 Test Equipment Used

The major items of test equipment used for the above tests are identified in Section 4.1.

2.8.5 Laboratory Environmental Conditions

Ambient Temperature 27.4°C
Relative Humidity 25.5%

2.8.6 Test Results

Soak Temperature 20°C
Test Temperature -10°C

Nominal Frequency