



TYPE APPROVAL CERTIFICATE

For a 406 Megahertz Distress Beacon for use with the Cospas-Sarsat Satellite System

Certificate Number: 222


Manufacturer: Jotron AS, Norway
Beacon Type(s): EPIRB Float Free/Non-Float Free
Beacon Models: Tron 60GPS and Tron 60S
Test Laboratory: OMEGA, Ukraine
Date of Test: February – September 2011

Details of the beacon features and battery type are provided overleaf.

The Cospas-Sarsat Council hereby certifies that the 406 MHz Distress Beacon Model identified above is compatible with the Cospas-Sarsat System as defined in documents:

C/S T.001 Specification for Cospas-Sarsat 406 MHz Distress Beacon
Issue 3 – Revision 11, October 2010
C/S T.007 Cospas-Sarsat 406 MHz Distress Beacon Type Approval Standard
Issue 4 – Revision 5, October 2010

TAC 222 issued on: 2 January 2012


Steven W. Lett
Head of Cospas-Sarsat Secretariat

NOTE, HOWEVER:

1. This certificate does not authorize the operation or sale of any 406 MHz distress beacon. Such authorization may require type acceptance by national administrations in countries where the beacon will be distributed, and may also be subject to national licensing requirements.
2. This certificate is intended only as a formal notification to the above identified manufacturer that the Cospas-Sarsat Council has determined, on the basis of test data of a beacon submitted by the manufacturer, that 406 MHz distress beacons of the type identified herein meet the standards for use with the Cospas-Sarsat System.
3. Although the manufacturer has formally stated that all beacons identified with the above model name(s) will meet the Cospas-Sarsat specification referenced above, this certificate is not a warranty and Cospas-Sarsat hereby expressly disclaims any and all liability arising out of or in connection with the issuance, use or misuse of the certificate.
4. This certificate is subject to revocation by the Cospas-Sarsat Council should the beacon type for which it is issued cease to meet the Cospas-Sarsat specification. A new certificate may be issued after satisfactory corrective action has been taken and correct performance demonstrated in accordance with the Cospas-Sarsat Type Approval Standard.
5. Cospas-Sarsat type approval testing requirements only address the electrical performance of the beacon at 406 MHz. Conformance of the beacon to operational and environmental requirements is the responsibility of national administrations.

Beacon Models: Tron 60GPS and Tron 60S
Manufacturer: Jotron AS, Norway
Operating temperature range: -20°C to +55°C (Class 2)
Battery Details: Lithium/Iron Disulfide (LiFeS₂), Energizer, type L91, 8 x AA-size cells
Operating Lifetime: 48 hours
Transmit Frequency: 406.037 MHz

Beacon Model Features:

- 121.5 MHz auxiliary radio locating device (power: 17 dBm, duty cycle: 96%);
- Strobe light (brightness: > 0.75 cd, duty cycle: 21 flashes/minute);
- Internal GPS receiver, manufacturer: Fastrax, model: IT500 ⁽¹⁾;
- Format of operational messages: long ⁽¹⁾ and short ⁽²⁾;
- Self-test mode, one burst of 520 ms ⁽¹⁾ or 440 ms ⁽²⁾;
- GNSS self-test, one burst of 520 ms ⁽¹⁾;
- Integral antenna;
- Automatic (via water contacts) and manual beacon activation;
- Beacons were tested in EPIRB configuration (“floating in water”, “on deck” and “above ground”).

Approved Beacon Message Protocols: Beacon is approved for encoding with the message protocols indicated with "Yes" and black text below:

USER PROTOCOLS ⁽²⁾	USER-LOCATION PROTOCOLS ⁽¹⁾	LOCATION PROTOCOLS ⁽¹⁾
Yes Maritime with MMSI	Yes Maritime with MMSI	Yes Standard Location: EPIRB with MMSI
Yes Maritime with Radio Call Sign	Yes Maritime with Radio Call Sign	Yes Standard Location: EPIRB with Serial Number
Yes EPIRB Float Free with Serial Number	Yes EPIRB Float Free with Serial Number	No Standard Location: ELT with 24-bit Address
No EPIRB Non Float Free with Serial Number	No EPIRB Non Float Free with Serial Number	No Standard Location: ELT with Aircraft Operator Designator
Yes Radio Call Sign	Yes Radio Call Sign	No Standard Location: ELT with Serial Number
No Aviation	No Aviation	No Standard Location: PLB with Serial Number
No ELT with Serial Number	No ELT with Serial Number	No National Location: EPIRB
No ELT with Aircraft Operator and Serial Number	No ELT with Aircraft Operator and Serial Number	No National Location: ELT
No ELT with Aircraft 24-bit Address	No ELT with Aircraft 24-bit Address	No National Location: PLB
No PLB with Serial Number	No PLB with Serial Number	
No National (Short Format Message)		
No National (Long Format Message)		

NOTES:
⁽¹⁾ – applicable only to GPS-enabled model Tron 60GPS
⁽²⁾ – applicable only to non-GPS model Tron 60S

FEDERAL COMMUNICATIONS COMMISSION

GRANT OF EQUIPMENT AUTHORIZATION

Certification

Jotron AS

Attention: Bjorn Rishovd, Certification Manager

NOT TRANSFERABLE

EQUIPMENT AUTHORIZATION is hereby issued to the named GRANTEE, and is VALID ONLY for the equipment identified hereon for use under the Commission's Rules and Regulations listed below.

FCC IDENTIFIER **VRVTRON60GPS**

Name of Grantee **Jotron AS**

Equipment Class: 406 MHz EPIRB

Notes: 406 MHz EPIRB with GPS

Grant Notes

FCC Rule Parts

Frequency Range (MHZ)

Output Watts

Frequency Tolerance

Emission Designator

80.1101(c)(5)

406 - 406.1

5

2 PPM

16K0G1D

80.1101(c)(5)

121.5

0.1

10 PPM

3K20A3X



EC TYPE EXAMINATION CERTIFICATE

MED-B-15192

In compliance with Module B of Council Directive 96/98/EC of the European Parliament and as amended by the Council Directive 2013/52/EU of 14 November 2013, this certificate is issued to the manufacturer:

Jotron AS

And applies to the product

**406 MHz EPIRB (COSPAS-SARSAT)
TRON 60S/TRON 60GPS
and
SIMRAD EP70EPIRB/SIMRAD EG70EPIRB**

This certificate attest that provisions according to type examination requirements given in

SOLAS 74/2009 Reg. IV/7
SOLAS 74/2009 Reg. X/3

IMO Res.A.662(16)

IMO Res.A.694(17)

IMO Res.A.696(17)

IMO Res.A.810(19)

IMO Res.MSC.36(63)-(1994 HSC Code) 14

IMO Res.MSC.97(73)-(2000 HSC Code) 14

IMO MSC/Circ.862

IMO COMSAR Circ.32

ITU-R M.633-3 (05/04)

ITU-R M.690-1 (10/95)

IEC 60945 (2002) incl. IEC 60945 Corr. 1 (2008)
IEC 61097-2 (2008)

IMO MSC/Circ. 862

Note: IMO MSC/Circ. 862 is applicable only to the optional remote activation device, not to the EPIRB itself.

This certificate replaces certificate no MED-B-13273, which is revoked.

This certificate loses its validity if the manufacturer makes any changes or modifications to the approved equipment, which have not been notified to and agreed upon with Nemko. Software changes and updates: - See Product description in the Annex. Should the specified regulations or standards be amended during the validity of this certificate, the products are to be re-approved prior to them being placed on board vessels to which the amended regulations or standards apply.

The attached Schedule of Approval forms part of this certificate. The certificate remains valid unless cancelled or revoked, provided the conditions in the attached schedule are complied with and the equipment remains satisfactory in service.

This product also fulfils the requirements of directive 2014/93/EU of 25 July 2014, which will enter into force 14 August 2015.

Oslo, 2015-05-08

Date of expiry: 2020-05-08

Notified Body Id. no. 0470
Nemko AS

Roy Uggerud
Nemko AS



Annex I to EC Type-Examination Certificate, No. MED-B-15192

SCHEDULE OF APPROVAL

Product description

Main unit(s): Jotron TRON 60S/TRON 60GPS – 406 MHz EPIRB (COSPAS-SARSAT)
Battery module - Energizer L91, Lithium/Iron Disulfide (Li/FeS₂) battery
Software module (Module 83057) – SW v.1.04
FB-60 – automatic float free bracket
MB-60 – manual bracket

Any limitations on the acceptance or use of the product or specific requirements

Jotron TRON 60S/TRON 60GPS to be used on vessels and life rafts in the maritime service
With regards to the Directive 2014/93/EU, the manufacturer cannot issue a Declaration of Conformity with reference to this directive before 14 August 2015, subject to any national delays in the implementation of the Directive.

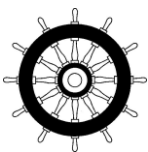
The approval documentation

Jotron AS – User Manual, 83080_UM_60GPS_E, rev 10.11.2011
Jotron AS – Technical Manual, 85866_TM_60S_GPS_A, rev. 13.01.12
Jotron AS – Principle Diagrams, Block Diagrams, Circuit Diagrams, Part/Component list, Label layouts
Omega – TEST REPORT No. 11/11 Issue 1, 4 January 2012. IEC 61097-2 (2008), IEC 60945 (2002) and RTCM 11000.2 (2002).
COSPAS-SARSAT – Type Approval Certificate, no. 222, dated 2. January 2012
Jotron AS – Statement MED-B and MED D Certification, dated 27.03.12

Alternative approval documentation for SIMRAD EP70EPIRB/SIMRAD EG70 EPIRB

Navico/SIMRAD – 000-10741-001 User Manual, EP70/EG70

Limitations/restrictions



"The Mark of Conformity" (i.e. the Wheel mark) may only be affixed to the above type approved equipment and a Manufacturer's Declaration of Conformity issued when the production control phase module D (Production Quality Assurance), E (Product Quality Assurance), or F (Product Verification), of Annex B of the Directive (MED) is fully complied with and controlled by a written inspection agreement with a notified body."



EC QUALITY SYSTEM CERTIFICATE MODULE D

MED-D-17051

This is to certify that Nemko AS did undertake the relevant Quality Assessment Procedures for the products of the manufacturer:

Jotron AS

which was found to comply with the requirements of the Navigation and Radio Communication equipment, of the Marine Equipment Directive (MED) 2014/90/EU.

The manufacturer maintains and applies a quality system in accordance with the requirements of the Marine Equipment Directive (MED), 2014/90/EU, Annex II, module D. The quality system for the product(s) defined in the annexed schedule has been assessed with respect to the procedure of conformity assessment described in the Directive.

Scope:	A.1/4.18	9 GHz SAR transponder
	A.1/4.32	Universal automatic identification system equipment (AIS)
	A.1/4.55	AIS SART equipment
	A.1/5.6	406 MHz EPIRB (COSPAS-SARSAT)
	A.1/5.17	Portable survival craft two-way VHF radiotelephone apparatus

This certificate replaces certificate no MED-D-17051 Rev. 01, which is revoked.

This certificate loses its validity if the manufacturer makes any changes or modifications to the approved quality system, which have not been notified to, and agreed with the notified body named on this certificate and/or after lapse of time, withdrawal or revocation of the EC Type Examination (Module B) Certificate.

Annual periodical audits will be held to verify the validity of this certificate.

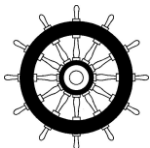
Oslo, 2019-09-19

Date of expiry: 2022-01-30

Notified Body Id. no. 0470
Nemko AS


Roy Uggerud
Nemko AS

Limitations/restrictions



"The Mark of Conformity" (i.e. the Wheel mark) may only be affixed to the above type approved equipment and a Manufacturer's Declaration of Conformity issued when the production control phase module D (Production Quality Assurance) of Annex B of the Directive (MED) is fully complied with and controlled by a written inspection agreement with a notified body."



SCHEDULE OF APPROVAL

Annex I to EC Type-Examination Certificate, No. MED-D-17051

Item #1		Module B data			USCG approval number
A.1/4.18	Tron SART 20 SIMRAD SA70 RADAR SART	EC Type-Examination No. MED-B-15191	Notified Body Nemko AS #0470	Date of expiry 2020-05-07	N/A
	9 GHz SAR transponder (SART)				
Item #2		Module B data			USCG approval number
A.1/4.32	Tron AIS TR-8000	EC Type-Examination No. MED-B-19341	Notified Body Nemko AS #0470	Date of expiry 2024-08-28	165.155/EC0470/ MED-B-19341
	Universal automatic identification system equipment (AIS)				
Item #3		Module B data			USCG approval number
A.1/4.55	Tron AIS-SART SIMRAD SA70 AIS-SART	EC Type-Examination No. MED-B-15121	Notified Body Nemko AS #0470	Date of expiry 2020-03-19	N/A
	AIS SART Equipment				





Item #7		Module B data			USCG approval number
A.1/5.6	Tron 60S/Tron 60GPS SIMRAD EP70EPIRB/ SIMRAD EG70EPIRB	EC Type- Examination No. MED-B-15192	Notified Body Nemko AS #0470	Date of expiry 2020-05-08	N/A
	406 MHz EPIRB (COSPAS- SARSAT)				
Item #8		Module B data			USCG approval number
A.1/5.6	Tron 40VDR	EC Type- Examination No. MED-B-16251	Notified Body Nemko AS #0470	Date of expiry 2021-09-28	N/A
	406 MHz EPIRB (COSPAS- SARSAT)				
Item #9		Module B data			USCG approval number
A.1/5.6	Tron 40S MKII	EC Type- Examination No. MED-B-16511	Notified Body Nemko AS #0470	Date of expiry 2021-12-28	N/A
	406 MHz EPIRB (COSPAS- SARSAT)				
Item #11		Module B data			USCG approval number
A.1/5.17	Tron TR30 GMDSS and Maritime VHF Radio	EC Type- Examination No. BABT- MED000108 Issue 01	Notified Body TUV SUD BABT #0168	Date of expiry 2021-09-13	N/A
	Portable survival craft two-way VHF radiotelephone apparatus				

Place(s) of production: Item #1, #3, #7, #8, #9 and #11 are produced at Jotron's subsidiary UAB Jotron, Lithuania.
Item #2, is partly produced at UAB Jotron and at Jotron AS, Tjodalynng, Norway.

----- End of certificate -----

Certificate of Conformity

IC: 2131A-TRON60SGPS

08806

Certification number

Certificate number

Issued to Jotron AS

Specifications RSS-287 Issue 2

Type of equipment (E1) EPIRB, float free
(E2) EPIRB manual activation

Model name Tron 60S, Tron 60GPS

Antenna information Internal

Frequency	Power	Emission designation
406 – 406.1	5	16K0G1D
121.5	0.05	3K20A3X

Test laboratory Nemko AS

Laboratory number 2040D

Additional information 406 MHz EPIRB

Certification of equipment means only that the equipment has met the requirements of the above-noted specification. Licence applications, where applicable to use certified equipment, are acted on accordingly by the Industry Canada issuing office and will depend on the existing radio environment, service and location of operation. This certificate is issued on condition that the holder complies and will continue to comply with the requirements and procedures issued by Industry Canada. The equipment for which this certificate is issued shall not be manufactured, imported, distributed, leased, offered for sale or sold unless the equipment complies with the applicable technical specifications and procedures issued by Industry Canada.

I hereby attest that the subject equipment was tested and found in compliance with the above-noted specification.

Certified by



Sim Jagpal, General Manager

Date 1 / 9 / 2015



Statement of Compliance

Applicant: Jotron AS

Manufacturer: Same as applicant

Product: 406MHz EPIRB (COSPAS-SARSAT)

Model: TRON 60S and
TRON 60GPS

Nemko AS confirms that the product TRON 60S and TRON 60GPS is tested according IMO Res.A.810(19) with the amendment MSC.56(66) and MSC.120(74).

Date of issue 2013-11-19

Document revision: 1.1

Roy Uggerud [Certification Manager]

Database ID: 222-1

TAC Number: 222 TAC Date: 02-Jan-12 TAC Rev Date:

Beacon Model Name: Tron 60GPS

Additional Names: Simrad EG70

Manufacturer: Jotron AS

Tx Frequencies: 406.037 MHz In Production: Yes Class: 2

Type: FF / Non FF EPIRB Tested Life: 48
FF=Float Free (24 / 48 hrs)

Battery: Lithium/Iron Disulfide, (Li/FeS2) Energizer, type L91, 8x AA size cells.
Manufacturer (Model, No of Cells)

Protocols Tested: UL, SL Protocol Notes: U=User; UL=User-Location;
Self Test: Yes SL=Standard Location; NL=National Location

Self Test RF: Yes Self Test RF (Short/Long): Long

Self Test Format Flag: Long Self Test Consistent with 15 Hex ID: Yes

Homer Freq: 121.5 MHz Homer Duty Cycle: 96%

Homer Power: 17 dBm

Strobe Light: Yes Strobe Brightness: > 0.75 cd

Strobe Duty Cycle: 21 flashes/minute

Nav Device: Int

Nav Device Model: Internal GPS receiver, model Fastrex IT500

Separable Antenna: No

Antenna Model: Integral antenna

Additional Functions: GNSS self-test;
Automatic beacon activation via the sea water contacts.

Comments General: Type approved with the following variants of Standard Location protocols: EPIRB with MMSI,
EPIRB with Serial Number; and variants of User-Location protocol: Maritime with MMSI, Maritime
with Radio Call Sign, EPIRB Float Free with Serial Number, and Radio Call Sign.
Tested in EPIRB-like configurations only, i.e. Corresponding to beacon used while floating in water,
on deck of a vessel or in a safety raft.
Distributed by NAVICO under the model name 'Simrad EG70'.

TAC Rev History: 1) 2-Jan-12: original TAC 222 issued for models 'Tron 60GPS' and 'Tron 60S'; 2) 12-Jul-12:
Additional names 'Simrad EG70' and 'Simrad EP70' added to TAC 222.

Database ID: 222-1



Declaration of Conformity

We, the undersigned Manufacturer

Company	Jotron AS
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Certify and declare under our responsibility that the following product:

Product Description	Emergency transmitter float free
Manufacturer	Jotron AS
Brand Name	Jotron
Model/Type	Tron 60GPS and Tron 60S, Consist of: 83076 Battery Module Tron 60S / GPS 85621 FB 60 Bracket w/Protective Cover 86218 HRU-kit w/H2O, HAMMAR hydrostatic release mechanism.

Is tested to and conforms with the essential test suites included in the following standards, which are in force within the EEA:

Standard	Issue date	Certificate no.
IEC 61097-2 ed.3.0	2008	MED-B-15192 Nemko MED-D-17051 Rev.02 Nemko
IEC 60945 ed.4.0 including IEC 60945 Corrigendum 1	2002, corr.2008	
EN 300 066 v.1.3.1	2001-01	
EN 50581	2012	
ISO 9001	2015	Certificate no. 900022
ISO 14001	2015	Certificate no. 901317

And therefore complies with the essential requirements of the following directives:

Directive Name	Directive number	Further identification
MED	2014/90/EU	Directive 2014/90/EU repealing Directive 96/98/EC, Applies also to Regulation (EU) 2019/1397
RoHS	2011/65/EU	Restriction of Hazardous Substances Applies also to Directive (EU) 2015/863

Product Safety Information

Tron 60S w/FB60 bracket, Tron 60S w/MB60 bracket, Tron 60GPS w/FB60 bracket, Tron 60GPS w/MB60 bracket
Art. no 83310, 83320, 83330, 83340, 102036



MANUFACTURER:

Jotron AS

PRODUCT DESCRIPTION

Listed product is an Emergency Position Indication Radio Beacon containing lithium batteries. The battery pack has fulfilled the test according to UN Manual of Test and Criteria ST/SG/AC.10/11 fifth revised edition, Chap 38.3.

GENERAL PRODUCT INFORMATION

The 60S/60GPS battery module consists of primary lithium battery cells; The product consists of 8 battery cells divided into 4 separate packs, each pack consists of 1.98-gram of lithium and a total of 7.84-gram lithium per product.

DO NOT ATTEMPT TO RECHARGE THE BATTERY

The 60S/60GPS battery module should only be disassembled after guidance from manufacturer or their representatives.

HAZARDOUS SUBSTANCES

Under EC (European Chemical Agency (ECHA)) and US (Occupational Safety and Health Admin (OSHA)) legislation this product is classified as a manufactured article, which does not release, or otherwise result in exposure to a hazardous chemical under normal condition of use. This product is therefore exempted from the requirement of a dedicated Material Safety Data Sheet (MSDS).

The following information is considered as guidance and as courtesy; Information from Energizer Battery Manufacturing Inc concerning battery cell type Energizer L-91 light with chemical system Lithium Iron Disulfide, the product may contain the following active ingredients;

CAS.no	Material or Ingredients
110-71-4	1,2 Dimethoxyethane
646-06-0	1,3 Dioxolane
7782-42-5	Graphite
1309-36-0	Iron Disulfide
7439-93-2	Lithium or Lithium Alloy
10377-51-2	Lithium Iodide
1333-86-4	Carbon
7439-89-6	Iron

Product Safety Information

Tron 60S w/FB60 bracket, Tron 60S w/MB60 bracket, Tron 60GPS w/FB60 bracket, Tron 60GPS w/MB60 bracket
Art. no 83310, 83320, 83330, 83340, 102036



No release or hazardous chemical will be exposed as long as the cells remain in their sealed and original condition.

This information concerning ingredients is given in good faith and based on information from Energizer Battery Manufacturing Inc Product Safety Datasheet Edit January 2014. Jotron makes no warranty, either expressed or implied, with respect to this information.

TRANSPORT INFORMATION

The product is restricted and classified as follows during shipment;

Hazard Class:	Class 9
UN ID No:	UN3091
Proper shipping name:	Lithium Metal Batteries Contained in Equipment
Packing Instruction:	970 (II) acc to IATA/ICAO regulations
Packing Instruction:	Special Provision 188 acc to ADR/RID/IMDG code regulations
Lithium content in total:	7.84 grams
Battery pack Net-weight:	0.145 Kg

Product Safety Information

Tron 60S/60GPS Battery kit

Art. no 86225/87875/87041/80894



MANUFACTURER:

Jotron AS

EMERGENCY CONTACT

PRODUCT DESCRIPTION

Listed product is an EPIRB battery module for use on marine Emergency Position Indication Radio Beacon containing lithium batteries.

The battery pack has fulfilled the test according to UN Manual of Test and Criteria ST/SG/AC.10/11 fifth revised edition.

GENERAL PRODUCT INFORMATION

The 60S/60GPS battery module consists of primary lithium battery cells;

The product consists of 8 battery cells divided into 4 separate packs, each pack consists of 1.98-gram of lithium and a total of 7.84-gram lithium per product.

DO NOT ATTEMPT TO RECHARGE THE BATTERY

The 60S/60GPS battery module should only be disassembled after guidance from manufacturer or their representatives.

HAZARDOUS SUBSTANCES

Under EC (European Chemical Agency (ECHA)) and US (Occupational Safety and Health Admin (OSHA)) legislation this product is classified as a manufactured article, which does not release, or otherwise result in exposure to a hazardous chemical under normal condition of use. This product is therefore exempted from the requirement of a dedicated Material Safety Data Sheet (MSDS).

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Information from Energizer Battery Manufacturing Inc concerning battery cell type Energizer L-91 light with chemical system Lithium Iron Disulfide, the product may contain the following active ingredients;

CAS.no	Material or Ingredients
110-71-4	1,2 Diemethoxyethane
646-06-0	1,3 Dioxolane
7782-42-5	Graphite
1309-36-0	Iron Disulfide
7439-93-2	Lithium or Lithium Alloy
10377-51-2	Lithium Iodide
1333-86-4	Carbon
7439-89-6	Iron

Product Safety Information

Tron 60S/60GPS Battery kit

Art. no 86225/87875/87041/80894



No release or hazardous chemical will be exposed as long as the cells remain in their sealed and original condition.

This information concerning ingredients is given in good faith and based on information from Energizer Battery Manufacturing Inc Product Safety Datasheet Edit January 2014. Jotron makes no warranty, either expressed or implied, with respect to this information.

DISPOSAL INFORMATION

The product shall follow local disposal regulations with reference to electronics and primary lithium battery.

TRANSPORT INFORMATION

This product is restricted and classified as follows during shipment;

Hazard Class:	Class 9
UN ID No:	UN3090
Proper shipping name:	Lithium Metal Batteries
Packing Instruction:	968 (IA) acc to IATA/ICAO regulations
Packing Instruction:	903 acc to ADR/RID/IMDG code regulations
Lithium content in total:	7.84 grams
Battery pack Net-weight:	0.145 Kg