Radio Technical Commission for Maritime Services (RTCM)

Chris Hoffman
RTCM Board of Directors Chairman
Chairman RTCM Sub Committees SC110 and SC136

Beacon Manufacturers Workshop 2019

Agenda

- RTCM Overview
- SC110 Overview
- SC136 Overview
- RTCM Cospas-Sarsat Related Activities
- RTCM EPIRB Standard Status
- RTCM PLB Standard Status

RTCM Overview

RTCM Overview

- RTCM is an international non-profit scientific, professional and educational organization
- Members are both government and non-government organizations
- Established in 1947 as a U.S. government advisory organization
- Now an independent organization with members from all over the world
- Headquartered in Arlington VA, (Washington DC)

RTCM Main Activities

- RTCMs main area of activity is related to commercial shipping and navigation and radiocommunications systems for these vessels
- It also works in other areas when requested such as Differential GPS and Terrestrial Satellite Distress Alerting
- RTCMs main role is in developing standards, but it also plays a major part in national and international committees, information dissemination to its members and advising on legislation and regulatory changes

RTCM SC110
Emergency Beacons
Overview

RTCM Special Committee SC110 on Emergency Beacons

- SC110's primary role is to develop and maintain standards for Emergency Beacons – 406 MHz EPIRBs, PLBs and 406 MHz Ship Security Alert Systems (SSAS)
- It is also heavily involved in:
  - Considering new technology, ideas and other related matters of interest to its members e.g. AIS EPIRB, C/S MEOSAR system, ELT(DT)s
  - RTCM also plays a very active role in the work of Cospas-Sarsat and in particular in its Joint Committee (JC) meetings
  - Developing input towards Second Generation Beacon Standards for MEOSAR
  - New EPIRB and PLB AIS standards

RTCM SC136
Beacon Type Approvals
Overview

RTCM Special Committee SC136 on Beacon Type Approvals

- Took on the mantel of the Type Approvals Workshop (TAW) group earlier this year
- Principally acts as a sub-group of SC110
- Currently mainly focusses on matters related to C/S T.001 and T.007, likely to get involved in T.021 in the future
- Basically provides a forum for RTCM and the C/S Secretariat along with other Participants to try and address type approval related matters

COSPAS SARSAT

TYPE APPROVAL CERTIFICATE

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

Certificate Number: 309

Manufacturer: Standard Communications Pty Ltd (GME), Australia

Beacon Type(s): Non-Float Free EPIRB

Beacon Model(s): MT600G, MT600

Test Laboratory: OMEGA, Sevastopol, Crimea, Ukraine

Dates of Test: September 2012 – November 2013

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 13, October 2012

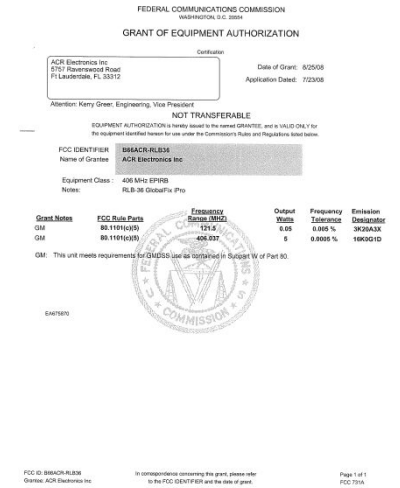
C/S T.007 Cospas-Sarsat 406 MHz Distress Beacon Type Approval Standard
Issue 4 – Revision 4, October 2012

Original TAC 247 issued on 12 December 2013 3-rd extension TAC 293 issued on 6 December 2018
1-st extension TAC 286 issued on 9 February 2017
2-nd extension TAC 293 issued on 23 October 2017

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 licencing 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.



FEDERAL COMMUNICATIONS COMMISSION
WASHINGTON, D.C. 20554

GRANT OF EQUIPMENT AUTHORIZATION

Certification

ACR Electronics Inc
5757 Ravenswood Road
Ft Lauderdale, FL 33312

Date of Grant: 8/25/08
Application Dated: 7/23/08

Attention: Kerry Greer, Engineering, Vice President

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	B66ACR-RLB36
Name of Grantee	ACR Electronics Inc
Equipment Class:	406 MHz EPIRB
Notes:	RLB-36 GlobalFix Pro

Grant Notes	FCC Rule Parts	Frequency Range (MHz)	Output Watts	Frequency Tolerance	Emission Designator
GM	80.1101(c)(5)	121.5	0.05	0.005 %	3K20A3X
GM	80.1101(c)(5)	406.037	5	0.0005 %	16K0G1D

GM: This unit meets requirements for GMDSS use as contained in Subpart W of Part 80.

EA675870

FCC ID: B66ACR-RLB36 Grantee: ACR Electronics Inc

In correspondence concerning this grant, please refer to the FCC IDENTIFIER and the date of grant.

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FCC 731A

RTCM
Cospas-Sarsat
Related Activities

RTCM C/S Related Activity

- Under its observer status, RTCM basically represents the interests of beacon manufacturers at C/S meetings
- So far this year RTCM has participated in the following:
  - CSC-61 Open Council Meeting (Feb)
  - TG-1/2019 on ELT(DT)s and SGBs (April)
  - JC-33 (June)
  - EWG-1/2019/RLS (Virtual Meetings) (September)
- At these meetings RTCM submitted 16 documents in its own right and was involved in a further 7 joint submissions

RTCM C/S Related Activity

- Topics addressed by RTCM included:
  - PLBs on PFDs
  - Changes to T.001, T.007, T.018 and T.021
  - RLS and SGB GNSS Receiver functionality
  - Various features and functions of ELT(DT)s
  - MMSI Numbers for RLS Capable EPIRBs and PLBs
  - Programming Adapters
  - SINSIN
  - Changes resulting from the new IMO EPIRB standard
- All of this work supports your beacons business, so please participate

RTCM
EPIRB Standard
Status

EPIRB Status

- Current standard in FCC Rules is RTCM 11000.3
- FCC requires all EPIRBs sold in the USA to comply with 11000.3 from 17 Jan 2020
- Current standard RTCM 11000.4 Amendment 1
- Just addresses differences from the IEC standard
  - Mandatory Internal Navigation Device
  - Internal Navigation Device Timing
  - GNSS Self Test
  - Inadvertent Activation
  - Incorrect Mounting
  - Ergonomics Requirements and Tests
  - Cold Thermal Shock Tests
  - Includes options for AIS Homing signals

- RTCM has petitioned the FCC to adopt 11000.4
- RTCM is supporting work to update IEC 61097-2

RTCM
PLB Standard
Status

PLB Status


- Current standard in FCC Rules is RTCM 11010.2 including Amendments 1 and 2, dated June 8, 2012
- FCC requires all PLBs sold in the USA to comply with 11010.2 from 17 Jan 2020
- Only real implication of above is to require PLBs with integral GPS Receivers to be tested using the RTCM scenarios in Annex G of the standard
- The current Standard is RTCM 11010.3 Published June 25, 2018.
- RTCM petitioned the FCC to adopt this new standard in August 2018

PLB Status


- RTCM 11010.3 addresses:
- Two Generations of PLBs:
  - First Generation PLBs complying with C/S T.001 and approved to T.007
  - Second Generation PLBs complying with C/S T.018 and approved to T.021
- Two Categories of PLBs:
  - Category 1 PLBs designed for use in and around water and which must float
  - Category 2 PLBs designed principally for use on land and which are not required to float
- Three Classes of PLB:
  - Class 0 - -55C to +70C, Class 1 - -40C to +55C, Class 2 -20C to +55C
- Three Groups of PLB:
  - Group 1 PLBs include a 121.5 MHz homing transmitter
  - Group 2 PLBs – reserved for future use
  - Group 3 PLBs include a 121.5 MHz homer and an AIS Locating Transmitter

PLB Functions

- All PLBs must include a GNSS Receiver
- The GNSS position update rate requirement, is at least every 5 minutes
- Return Link Service (RLS) capability is optional in all PLBs
- The 121.5 MHz Homing Transmitter must have a duty cycle of at least 33% (not less than 0.75s on and then off for not more than 1.5s)
- For greater duty cycles the on time is increased and the off time decreased accordingly
- The AIS locating signal is based upon the AIS SART specification and uses the 972xxyyyy identity and the “MOB Active” text as does the AIS MOB

Beacon Manufacturers Workshop 2019

Questions?

Thank you

For further information on RTCM and details of membership and the work of SC110 / SC136 visit

www.rtcm.org