

RTCM 11000.4 Standard for 406 MHz Satellite Emergency Position-Indicating Radiobeacons (EPIRB) (with AIS), June 1, 2015

NOTE: This version of the RTCM EPIRB standard has not yet been incorporated into the regulations of the Federal Communications Commission. However, RTCM regards this standard as at least equivalent to the version cited in the regulations, so FCC authorization of EPIRBs built to this standard should be available through the FCC waiver process.

This standard contains minimum requirements for the functional and technical performance of maritime satellite emergency position-indicating radiobeacons (EPIRBs) operating in the 406.0 to 406.1 MHz band through a polar-orbiting satellite system. A 406 MHz satellite EPIRB designed and manufactured to the standards contained in this document constitutes the satellite EPIRB portion of the COSPAS-SARSAT System developed and implemented by the COSPAS-SARSAT Partners (Canada, France, the Russian Federation, and the United States).

When activated, the satellite EPIRB transmits in short bursts at approximately 50 second intervals. The transmission consists of an unmodulated carrier followed by a digital message format that provides stored information (identification, nationality, type of user, etc.), and optionally, current information such as the type of emergency and estimated location. The stored information is encoded in the satellite EPIRB by the manufacturer. The stored message includes the satellite EPIRB's identification, which, when decoded into its 15 character hexadecimal representation becomes the satellite EPIRB's unique identifier number, or 15 -Hex ID. This number is used by the SAR forces to identify the specific vessel in distress when the satellite EPIRB is activated. For satellite EPIRBs carried on USA vessels, it is also the number which is used by the satellite EPIRB's owner to register the satellite EPIRB in a registration data base maintained by the NOAA, NESDIS United States Mission Control Center (USMCC). The registration data provided by the satellite EPIRB's owner contains important additional information about the vessel on which the satellite EPIRB is installed. It also contains emergency points of contact who could be contacted in the event that the satellite EPIRB is activated. When a distress message is received by the United States MCC, the registry information is automatically appended to the alert message which is sent to the SAR forces.

Compared to RTCM 11000.2, currently referenced in regulations of the U.S. Federal Communications Commission, this version of the standard includes -

- A mandatory requirement for a position to be included in the beacon message, derived from an internal navigation device (such as a GPS receiver) in the EPIRB or from the vessel's GPS (or other Global Navigation Satellite System) receiver.
- Performance and test standards for an EPIRB's GPS receiver, as well as new ergonomic standards.
- The Automatic Identification System (AIS) configurations described in the table below.

Satellite EPIRBs are divided into two categories, two classes, and three groups as summarized by this table:

No	Cat 1 Float Free	Cat 2 Man Act	Class 1 -40°C	Class 2 -20°C	406 MHz Transmitter	Integral GPS Receiver	121.5 Homer	AIS Transmitter	
Original EPIRBs (RTCM 11000.3 and previous)									
1	X		X		X	X	X		Group 1
2	X			X	X	X	X		
3		X	X		X	X	X		
4		X		X	X	X	X		
EPIRB AIS (introduced with RTCM 11000.4)									
5	X		X		X	X		X	Group 2
6	X			X	X	X		X	
7		X	X		X	X		X	
8		X		X	X	X		X	
9	X		X		X	X	X	X	Group 3
10	X			X	X	X	X	X	
11		X	X		X	X	X	X	
12		X		X	X	X	X	X	