Aeromarine SRT Ltd.

# PRODUCT CATALOGUE

**Professional solutions for GMDSS radio survey**

AEROMARINE SRT
SAFETY SOLUTIONS


# GMDSS TEST SET

## For Marine Radio Survey

https://aeromarinesrt.com

Full Service for RF Design

# RADIO SURVEY


GMDSS Tester | EPIRB Tester | EPIRB Tester mini | AIS Tester

# GMDSS TESTERS

## PROFESSIONAL SOLUTIONS FOR GMDSS RADIO SURVEY

### SIMPLY USE IT

We supply the testers with very friendly software. The procedure of test report generation is fast and simple

### GET IT DELIVERED

The test instruments are shipped for free of charge to any location globally.
Receive your order within 5 working days!

### BUY AT BEST PRICE

Here you purchase from manufacturer directly. Therefore we can offer you the best prices and risk reducers.

### MINIMIZE YOUR RISKS

We provide global two years warranty against manufacture and firmware faults.
We assure continuous customer support, our tech team is always ready to help.

Complete GMDSS Test set for annual surveys, performance tests, shore-based maintenance of GMDSS radio equipment. Meets or exceeds all IMO and IACS requirements.


# CONTENTS


# Automated tests and reports

## Will do all work for you


# AIS Tester M1

AIS Tester is professional equipment for surveyors to provide mandatory annual testing of the Class A and Class B AIS mobile stations and AIS-SARTs in accordance with requirements of IMO and SOLAS. Complies with IMO circular letter "Guidelines on annual testing of the AIS unit MSC.1/Circ.1252".

Tester is capable to send/receive AIS or DSC messages with complete decoding of AIS data, including MMSI and coordinates, to simulate AIS data transmission, and to generate the "virtual vessel" calls.

Allows to measure frequencies and power levels in all AIS channels, simulate NMEA data transmissions, receive the data from pilot plug or external sensors.

With this professional test equipment a surveyor makes his job with pleasure. The tester provides possibility to make all measurements in automatic mode. Also the test report can be generated by the tester in a suitable form and in correspondence with all IMO requirements.

**Supported equipment:**

- Any AIS Class A and Class B stations
- VHF Radios with DSC
- AIS Base Stations
- AIS-SARTs
- Aids to Navigation devices (AtoN)

**Standard Set includes:**

- AIS Tester - Main Unit (incl. 4 power supply batteries AA type)
- USB Computer cable (USB A - USB A)1.5 m
- RF Cables: TNC - TNC, BNC - BNC
- Attenuator
- RF Adapter BNC - UHF
- Cable (DB9 - NMEA) with output for connection to pilot plug with open wires
- Calibration Certificate
- Technical description and user manual (English)
- Software


# One portable device

## Complete Radio Inspection Scope


# MRTS-7M

A universal maritime test tool for radio surveyors intended to measure operation parameters of all GMDSS radio equipment: MF/HF/VHF Radios with DSC, EPIRBs, SARTs and AIS mandatory to periodic checks according to IMO and SOLAS requirements.

Now you can provide complete radio inspection by one hand-held combo tester.

GMDSS Tester MRTS-7M is capable to generate signals, measure frequency, power levels, antenna VSWR in a range up to 500MHz. Tester decodes any DSC, AIS, or EPIRB messages to verify they correctly encoded, including MMSI codes, call signs, coordinates, CRC calculation and so on.

The Basic version of the tester is intended for checking of different types of VHF, MF/HF maritime radios with or without DSC. Also it can provide operating tests of NAVTEX equipment. Extended versions provide possibility to check AIS stations and/or all types EPIRB.

Extended version sets are supplied with additional accessories.

**Complies with:**

- IMO A.948 (23) or A.997(25), A.1020(26) resolutions
- IMO circular letters MSC.1/Circ.1252, IMO Circ.1040, MSC.1/Circ.1039
- IEC and RTCM Standards

**Standard Set:**

- Main Unit (MRTS – 7M)
- Power supply unit
- VHF/MF/HF-telescopic antenna
- USB-A – USB-B cable
- NMEA IN/OUT cable (DB9 fem – open wire 1.5m)
- User Manual
- Calibration Certificate
- Package
- Software

# WIDE TARGET RANGE

VHF

MF/HF

GMDSS

AIS SART

AIS


MRTS-7M(AE) TEST SCOPE

NAVTEX

EPIRB

PLB

MOB device

# ONE COMBO TESTER


**One device extensive test scope:**

- MF/HF radios with DSC
- VHF radios with DSC
- AIS stations, Class A and B
- AtoN & AIS Base stations
- AIS-SARTs
- EPIRB and PLB
- NAVTEX equipment
- S-VDR
- SSAS
- MoB devices

As a surveyor you will love our new software that turns inspection job easy and enjoyable. By USB cable you save all test results in customized and user-friendly database on PC or MAC, then you only need to select type of test report needed – the app will generate it automatically in rtf/pdf/html format. Finally Windows, MacOs and Linux are suppoted!

**The Tester MRTS-7M is available in different versions:**

- MRTS-7M – GMDSS Tester made to test all VHF and MF/HF maritime radios with DSC and NAVTEX
- MRTS-7M (A) – GMDSS + AIS Tester for checking VHF and MF/HF maritime radios with DSC, NAVTEX and AIS stations
- MRTS-7M (E) – GMDSS + EPIRB Tester for testing VHF and MF/HF maritime radios with DSC, NAVTEX and EPIRBs
- MRTS-7M (AE) – GMDSS + AIS +EPIRB Tester checks VHF and MF/HF maritime radios with DSC, NAVTEX, AIS stations and EPIRBs


# Professional tool

## Annual or shore-based EPIRB testing

# BEACON Tester 406 02

BEACON Tester 406 02 enables professional checking of all types of maritime emergency radio beacons that operate in COSPAS-SARSAT system.

Provides mandatory annual or shore-based EPIRB testing in accordance with IMO Circular MSC.1/Circ.1039, 1040.

BEACON Tester 406 02 helps in everyday surveyor's work. Device has userfriendly interface and provides exact and accurate measurements of EPIRBs frequency and power level as well as complete decoding of any C/S message.

Using the software you can generate test report automatically, it will fully comply with all IMO requirements.

All measurements can be done with tester's antenna (included to standard set) or by optional attenuator (requested separately).

Test results are shown on the display and saved in nonvolatile memory unit. Standard set includes software compatible Windows, MacOS or Linux. Using the software saved test results can be easily downloaded to a PC or laptop for test report automatic generation.

**Test scope:**

- EPIRBs
- PLB
- all types of COSPAS-SARSAT beacons
- S-VDR capsules
- Ship Security Alert Systems (SSAS)
- MoB devices

**Standard set includes:**

- EPIRB Tester 406 02 (406 MHz and 121,5 MHz are supported)
- 4 power supply batteries AA type
- USB Computer cable (USB A - USB A)1.5 m
- Antenna
- Calibration Certificate
- Technical description and user manual (English)
- Software


# Ensures safety

## Being small and intuitive

# BEACON Tester 406 Mini

BEACON Tester 406 Mini TESTER is third generation device designed to check the maritime emergency radio beacons (EPIRB, PLB) operating via COSPAS-SARSAT system. It is the most small and lightweight EPIRB Tester.

Tester provides measurements of EPIRBs frequency and power level as well as complete decoding of any C/S message.

BEACON Tester 406 Mini doesn't require any installations or additional settings to provide testing. Software is preinstalled on the device. The tester creates its own Wi-Fi link; no Internet connection is required. And once you have the tester connected to a mobile device by Wi-Fi, you can start testing.

All measurements are managed from your mobile device. All platforms are supported: Android, IOs, Windows, Linux, etc. Intuitive interface of the software enables even beginner surveyor to provide professional testing to make sure a beacon is reliable and ready for emergency. Test report will be generated automatically just click for a needed one:


Tester is used to carry out inspections in volume of annual test requirements or in volume of shore-based maintenance requirements under IMO resolutions or for fast check after beacon's encoding or installation and complies with circular letters IMO Circ.1040 and MSC.1/Circ.1039.

**Test scope:**

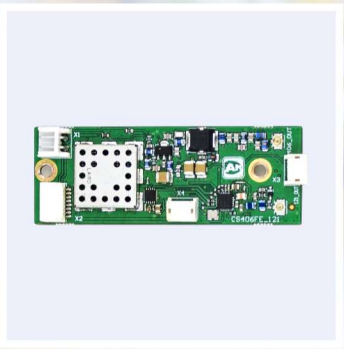
- EPIRBs
- PLB
- ELT
- S-VDR capsules
- Ship Security Alert Systems (SSAS)
- MoB devices

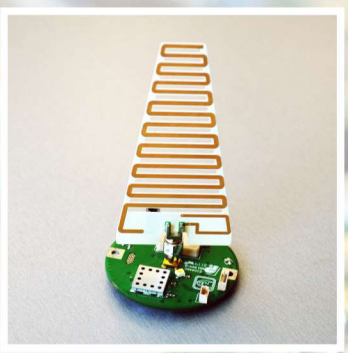
**Standart Set:**

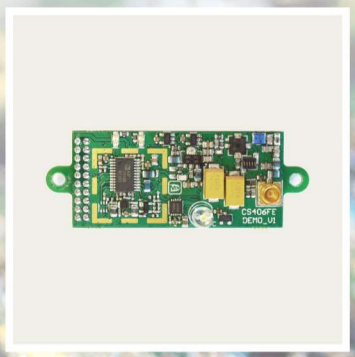
- EPIRB Tester Mini (406 MHz and 121,5 MHz are supported)
- Antenna 406/121MHz
- Antenna Wi-Fi
- Power cable (USB A – micro USB 1.5m)
- USB Power adapter
- Calibration certificate
- Technical description and operation manual

# RF DESIGN

## SMART SAFETY SOLUTIONS

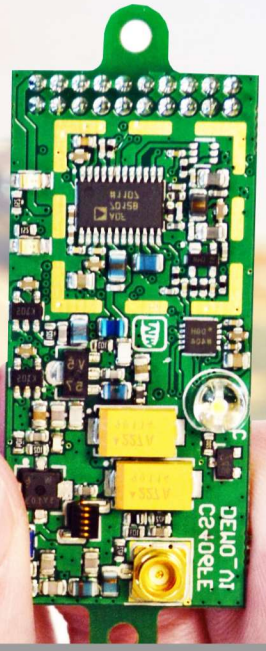




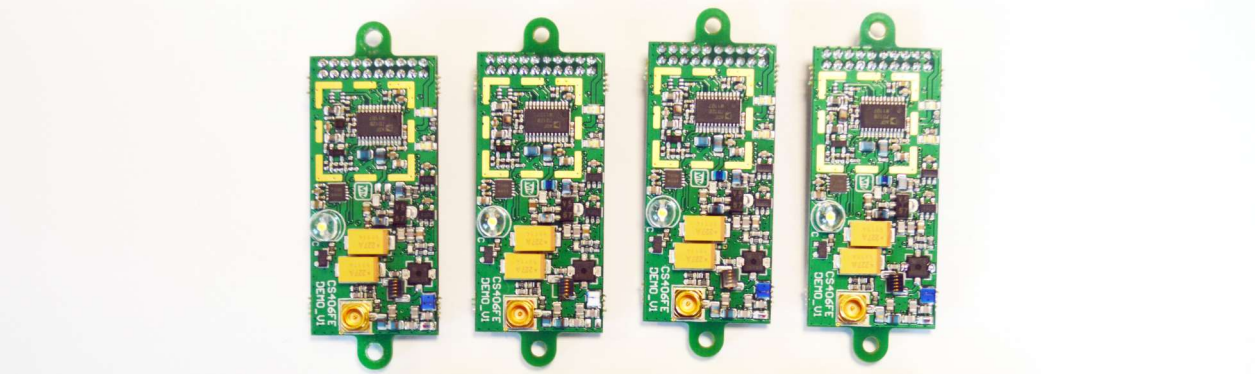


**SARSAT 406 + 121** **AIS-SART** **SARSAT 406**

**Design and manufacturing services in range from product concept and PCB design to production, assembly, and testing.**



Full Service for RF Design



## EPIRB PCB

**Channels:**
**406MHZ / 121.5MHz / AIS-SART**

EPIRB PCB is ready solution can be used in your product under your brand. PCB supports first and second generation EPIRB technology due to SDR solutions. Developed under Cospas-Sarsat T.001, T.007, IEC61097-2, RTCM SC11000, IC RSS287 standards and specifications.

Supports any combination of 3 channels: 406MHz, 121.5MHz, AIS-SART.

Meets IMO and GMDSS standards. Small size.

## AIS-SART PCB

**Channels:**
**AIS-SART**

Completely new AIS-SART OEM PCB can be integrated in any commercial GMDSS product. Designed under IEC 60945 (2002) incl. Comgendum 1 (2008), IEC 61097-14 (2010), IMO Resolution A.694(17), IMO Resolution MSC.246(83), IMO Resolution MSC.247(83), IMO Resolution MSC.256(84), ITU-R M. 1371-4(2010).

PCB based on SDR technology, Built-in GPS receiver.

Meets IMO and GMDSS standards. Small size

## PLB PCB

**Channels:**
**406MHz / 121.5MHz / DSC / AIS-SART**

PLB PCB is ready solution can be used in your product under your brand. Personal beacon locator PCB is available as combination of 406MHz, AIS-SART, 121.5MHz, DSC channels.

Developed under Cospas-Sarsat and RTCM standards.

Easily integratable and adjustable. Small size.

## SPECIFICATIONS:

**406MHz channel:**

- COSPAS-SARSAT frequency – can be adjusted in 406.0-406.1MHz range with 3kHz step
- 406MHz channel power - 37dBm +/-2dBm (5W)
- Modulation – phase modulation 1.1 radian
- Modulation type - digital with phase discretization - 0.00044 radians
- Data rate – 400 Baud
- ID and MMSI coding by PC or laptop
- Power supply -7.2V
- Currency consumption – 40mA
- Operation modes - emergency/test
- Self test
- Operation temperature range: -20°C +55°C
- Standards – T.001, T.007, IEC61097-2, RTCM SC11000, IC RSS287, ETS300 066

**121.5 MHz channel:**

- Operation frequency -121.5MHz
- Power - 50mW
- Modulation - AM sweeptone 400-1500Hz
- Modulation type – digital
- Frequency stability - not less than 2ppm
- Power - 7.2V
- Currency consuption (average) – 30mA
- Operation temperature range – -20°C +55°C

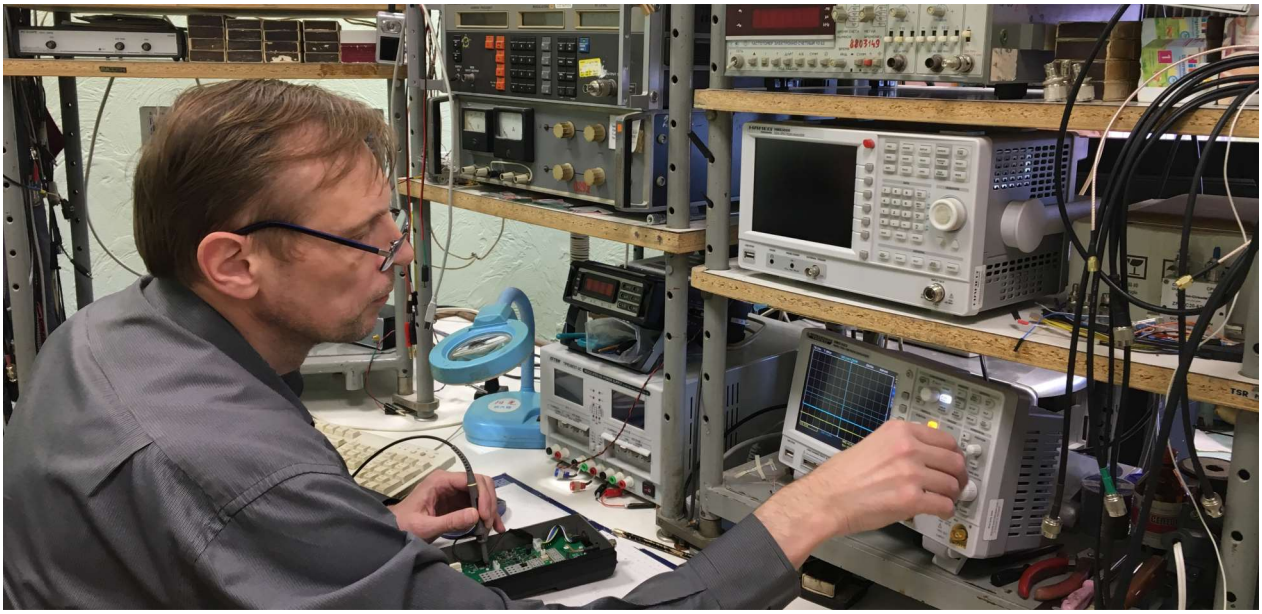
**AIS-SART channel:**

- Operation frequencies:
- -channel 1 -161.975 MHz
- -channel 2 -162.025 MHz
- Power – 33dBm (2W)
- Modulation – GMSK
- Modulation type – digital
- Frequency stabilty - not less than 2ppm
- Data rate – 9600 Baud
- ID and MMSI coding by PC or laptop
- Operation mode - emergency or test
- Self test – battery voltage control, output power, frequency capture, GPS source
- Power supply -7,2V
- Currency consumption (with GPS) – 18mA
- Temperature range: -20°C +55°C
- Specification - IEC_61097-14

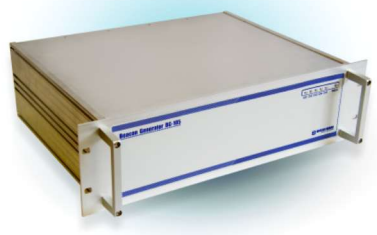
## RF Design & Technologies

Our company offers a wide range of electronic design services in field of Radio frequency (RF) engineering in maritime and aviation areas.

Applying our experience to RF design and manufacturing, we offer PCB engineering and development services to companies of such various industries as telecom, commercial, industrial, aerospace and military.

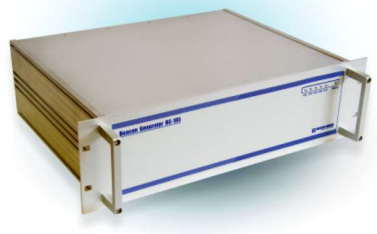


# Cospas-Sarsat Professional Special use devices



## BEACON Simulator BG-105

BEACON Simulator BG-105 is high-precision simulator of Cospas-Sarsat emergency beacons: 406MHz EPIRB, ELT, PLB. The device allows to simulate up to 5 simultaneously beacons with messages overlay in time. Designed under T.001.



## Cospas-Sarsat Reference Orbitography Beacon ROB-105

ROB-105 is being developed as validation equipment for Galileo or Cospas-Sarsat systems. It is a highly accurate, adjustable generator of SAR signals in the 406.0-406.1MHz frequency band on 5 channels simultaneously. The device is capable to emulate any C/S SAR beacon: EPIRB, PLB or ELT. Designed under T.022.

## Sarsat Beacon Monitoring System SBM 406

Sarsat Beacon Monitoring System is specially designed for 406MHz emergency radio beacon signals detection, reception, verifying, decoding and positioning.

SBM 406 can be used in coast guard centres. The system reduces the emergency signal reception and reduces processing time up to 30 minutes faster comparing to satellite channel path.

IT ALLOWS START RESCUE OPERATION IMMEDIATELY!

# DESIGN AND ENGINEERING

**Aeromarine SRT is a small business committed to providing expert engineering support to the private industry in all phases of system development in the fields of digital communications and signal processing systems.**

**These capabilities encompass the engineering activities of System Engineering and Analysis, algorithm design, detailed hardware and software design, prototype hardware and software development and production manufacturing.**

**We can also develop and manufacture your product under exclusivity agreements.**

## ENGINEERING DISCIPLINES

- MODULATION AND DEMODULATION
- DETECTION AND ESTIMATION
- ERROR CONTROL CODING/DECODING
- INFORMATION THEORY
- FEEDBACK CONTROL SYSTEMS
- MICROPROCESSORS
- DIGITAL SIGNAL PROCESSING
- ELECTROMAGNETIC FIELD THEORY

## HARDWARE DESIGN

- HIGH SPEED LOGIC CIRCUITS
- MICROPROCESSOR BASED CIRCUITS
- SPECIAL DSP PROCESSOR DESIGN
- FPGA LOGIC DESIGN
- RF DESIGN (DC to 6 GHz)
- ANALOG DESIGN

## SIGNAL PROCESSING

- ANALOG/DIGITAL FILTERING
- SPECTRAL ANALYSIS
- SYNCHRONIZATION TECHNIQUES
- SPREAD SPECTRUM TECHNIQUES
- INTERLEAVING
- MATCHED FILTERING
- CORRELATION
- SIGNAL ACQUISITION & TRACKING CONTROL
- DIGITAL DEMODULATION

## ENGINEERING APPLICATION

- PHASE LOCK LOOPOS (DIGITAL & ANALOG)
- AGD, AFC (DIGITAL & ANALOG)
- SIGNAL SYNTHESIZERS
- TRANSMITTERS & RECEIVERS
- CHANNEL SIMULATORS
- SPECIAL TEST EQUIPMENT FOR SYSTEMS, SUBSYSTEMS, AND CIRCUIT CARDS
- SEARCH AND RESCUE BEACONS
- AIS-SART

## SYSTEM DESIGN/ANALYSIS

- SYSTEM SPECIFICATION PREPARATION
- COMPUTER SIMULATION MODELING
- LINK ANALYSIS
- PERFORMANCE ANALYSIS
- DSP ALGORITHM DESIGN
- TEST SPECIFICATIONS
- CHANNEL MODELING
- SYSTEM EFFECTIVENESS & AVAILABILITY
- INTEGRATION PLANNING

Aeromarine SRT particular specialization is in providing custom hardware development of prime item equipment and supporting test equipment. This can include proof of concept models, engineering prototypes, and production model designs.

Our capabilities are founded on a very experienced staff possessing considerable breadth in the theoretical basis of communications and signal processing systems and their hardware and software implementations. This includes considerable complementary experience in technical project management. This unique combination of engineering expertise and engineering management results in elegant, innovative, practical low cost technical solutions.

Aeromarine SRT design facilities include the latest in CAD design tools such as Advanced System Modeling software, Solid Modeling Mechanical Packaging, AnSoft Designer tools for Analog/RF circuit design, DSP development workstations, FPGA design, in-house PWB design including flex circuitry, Automation Testing Software and many others.

# AEROMARINE SRT PROFILE

## Company profile

Aeromarine SRT is a global supplier of GMDSS Testers for radio surveyors and inspectors. Our test instruments are designed to provide the most efficient checking of marine radio equipment for customers all over the world with excellent quality and extended guaranty.

## Our Mission

Our mission is to develop, manufacture and deliver efficient equipment that a radio surveyor estimates as a comfortable and reliable tool of his everyday work. Aeromarine SRT strives to provide all Testers with as user-friendly interface as possible, which assures easy and prompt testing of each type of equipment. Our dream is to supply Testers that do all job automatically, and we are half way.

## Our Products

We supply professional test devices to check a range of GMDSS equipment:

- AIS, AIS-SARTs
- Cospas-Sarsat beacons
- MF/HF and VHF GMDSS radios with DSC
- GMDSS stations
- NAVTEX
- Man Over Board (MOB) devices
- SSAS
- S-VDR capsules
- AtoN
- Base Stations

Aeromarine SRT Testers are used and appreciated by ship and aircraft surveyors, classification societies, administrative authorities, airborne and maritime equipment suppliers all over the globe. All GMDSS Testers are produced to conform the international standard DS/EN ISO 9001:2015. All GMDSS Testers provide checking in accordance with IMO and SOLAS standards and ITU requirements.

Using our test equipment even a beginner surveyor makes inspection procedure simply, fast and professionally.

Besides we do offer RF-design services in a field of Cospas-Sarsat engineering.

Aeromarine SRT develops unique solutions for integrating into a customer's product to face specific requirements and/or increase efficiency of device.

## Our History

Our company was founded in year 2001 by engineers, having great experience in domain of Cospas-Sarsat safety solutions.

Their objective was to apply ready researches and to develop modern efficient and useful radio equipment.

We developed and started serial production of a range of maritime safety equipment: EPIRB, RADAR SART, SART, ELT and accessories: hydrostatic release unit etc. Since that time our company has passed a long way and acquired a great experience in this domain. We have extended our professional standards and enriched our groundwork.

For the moment our staff is 24 persons, which are 15 qualified engineers and two of them are PhDs in Technical Sciences.

Since 2002 the company represents products on the international market and now Aeromarine SRT Ltd is the one of the prime vendors of the full range of GMDSS test equipment. Actually Aeromarine SRT Ltd is the Research and Production Company and its main activity is design and manufacture of GMDSS test equipment.

# Some of the industry leading companies in the world use our solutions in their business

**Companies and firms in more than 70 countries are currently working with Aeromarine SRT solutions.**

Our customers are leveraging the power of Aeromarine SRT solutions to grow their businesses.

**3000**
testers sold

**20+ years**
of engineering experience

**72 countries**
worldwide users

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Quality Management System
REGISTERED TO ISO 9001:2012


# GMDSS TEST SET

## For Radio Inspection

JUST PICK WHAT YOU NEED


http://aeromarinesrt.com

http://gmdsstesters.com

http://mussonmarine.com

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