GMDSS TESTERS

for maritime radio surveys

SART TESTER
Model: STU-1
Tester for 9GHz Radar SART

GMDSS TESTER

MARINE RADIO TEST SET
MODEL MRTS-7M

Product Catalogue

Professional solutions for GMDSS inspections

CONTENTS

MRTS-7M

GMDSS MULTI TESTER

ONE FOR ALL
Full-scale radio inspections with a single tool

MRTS-7M is a professional multifunctional tool for maritime radio surveyors. It provides operational testing of all types of GMDSS equipment, as well as AIS. Any manufacturer's equipment is supported.

The production of this Multi Tester is based on the company's 21-year experience in GMDSS testers development, and overall 23 years of engineering in search and rescue technologies.

To make MRTS-7M technologically advanced and user-friendly, we have applied modern solutions in this field. Its functionality is constantly being brought in line with modern changing international requirements. We make sure that the device allows conducting periodic inspections of GMDSS and AIS equipment, in accordance with the latest IMO standards and the requirements of classification societies.

◈◈ GMDSS Multi Software compatible

Besides, using special cutting-edge software, the surveyor can manage the test results on any PC with minimum effort, and then automatically generate test reports in IMO-compliant format - the paperwork is reduced to a minimum.

All test procedures are carried out in accordance with international standards, such as:

· IMO A.948 (23) or A.997(25), A.1020(26) resolutions (for marine radio stations);

· The circular letter MSC.1 /Circ.1252 (for AIS stations);

· IMO Circulars MSC.1/Circ.1039/Rev.1, 1040/Rev.2 (for C/S beacons);

· IMO Resolution A.802(19), SOLAS-74/88 (for SARTs).

Features of MRTS-7M:

· wide range of tested equipment is supported;

· small size and light weight of the device;

· intuitive and user-friendly interface;

· LCD with backlight for comfortable operation under any light conditions;

· 20-button keyboard for quick access to in-demand functions.

MRTS-7M

GMDSS MULTI TESTER

Get on board with a lightweight case — bulky testers are in the past!

UHF RF cables set

Power supply unit

NMEA In / Out cable
(DB9 fem - Pilot Plug)

USB A - USB B cable

Telescopic antenna

Extended set with SART testing unit STU-1
in the crushproof & watertight case

Complete Set:

· GMDSS Tester MRTS-7M – main unit

· VHF Power Sensor & VSWR Meter, PS-1 (60W)

· Telescopic antenna

· UHF RF cables set

· NMEA In / Out cable (DB9 fem - Pilot Plug)

· USB A - USB B cable

· Power supply unit

· Crushproof & watertight case

Options:

· SART testing unit STU-1

· MF/HF Power Sensor & VSWR Meter, PS-2 (500W)

VHF Power Sensor & VSWR Meter, PS-1

⊘ **Option**

MF/HF Power Sensor & VSWR Meter, PS-2

CE & Calibration
Certificates

Technical description
and user manual (English)

Software

**The most compact GMDSS multi tester
with extensive functionality**

Main unit dimensions	**100 x 200 x 45 mm**
Main unit weight	**0.44 kg**
Total dimensions with case:	**385 x 290 x 160 mm**
Total weight with case:	**3.7 kg**

MRTS-7M
GMDSS MULTI TESTER

ONE FOR ALL
Full-scale radio inspections with a single tool

MRTS-7M TESTING SCOPE

MF/HF Radio	EPIRB / EPIRB AIS
VHF Radio	AIS
AIS-SART	9 GHz SART *
NBDP (Telex)	NAVTEX
MOB device	PLB

* available when using the extended complete set

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MRTS-7M enables testing of the following types of equipment:

— VHF receiver-transmitters:

• operation tests on any simplex channel including 6, 9, 13 and 16 channels;
• measurement of frequency and frequency deviation;
• measurement of antenna feeder VSWR and reflected power.

— VHF receiver-transmitters with DSC (DSC Controllers, Watch Receivers):

• test of correct transmission/reception of DSC messages by means of transmission/reception of selective Test call to particular MMSI number and Distress (to all ships) messages;
• check the MMSI code programmed in equipment without any broadcast emission;
• measurement of frequency and frequency deviation;
• measurement of output and reflected power.

— VHF equipment of duplex radiotelephony (portable):

• operation tests on channels 6, 9, 13, 16 (at least);
• measurement of output power, carrier frequency and frequency deviation.

— VHF radiotelephone stations operating in range (300 - 337) MHz (intended for river-sea vessels):

• measurement of output power;
• measurement of carrier frequency;
• measurement of frequency deviation.

— AIS class A, AIS class B, AtoN, AIS Base stations:

• measure AIS frequencies (on channels 1, 2);
• measure or estimate the AIS transmitted power (on channels 1, 2);
• receive and decode the AIS messages;
• send the data to AIS stations;
• pass the DSC polling information (channel 70);
• check AIS answer to so called "virtual vessel";
• simulate NMEA data transmissions;
• simulate AIS data transmissions, such as ship's name, position, length, course, speed, power and beam;
• transmit and receive the DSC messages of different types for VHF stations;
• receive the data from pilot plug or external sensors.

— AIS-SARTs:

• measure AIS-SART frequencies;
• measure or estimate the AIS-SART transmitted power;
• receive and decode the AIS-SART message;

— MF/HF radiotelephone equipment:

• measurement of frequency in range 1600 – 30000 kHz;
• operation tests in frequency range 1600 – 30000 kHz;
• measurement of output power up to 500 W;
• measurement of antenna feeder VSWR and reflected power (when tested using optional power sensor PS-2).

— MF/HF DSC Controllers:

• check the MMSI code programmed in equipment;
• check receipt of DISTRESS signal by MF/HF equipment with DSC by means of transmit of selective DISTRESS message.

— MF/HF radiotelephone equipment with DSC:

• test of correct transmission/reception of DSC messages by means of transmission/reception of selective Test call to particular MMSI number and Distress (to all ships) messages on any of 6 distress channels.

— NAVTEX equipment:

• operation tests by means of sending one of two available test messages on any of three frequencies: 490 kHz, 518 kHz or 4209.5 kHz.

— All COSPAS-SARSAT radio beacons:

• reception, demodulation and decoding of the emergency information transmitted on channel 406MHz;
• frequency measurement of 406MHz and 121.5MHz signals;
• audio-control of the sweep 121.5MHz signal presence;
• power level measurement on 406MHz, 121.5MHz channels;
• measurement of total transmission time of 406MHz signal;
• measurement of unmodulated carrier duration of 406MHz signal;
• estimation of the equivalent radiated power of 406MHz signal through broadcast;
• measurement of power on AIS homing channel;
• measurement of frequency on AIS homing channel;
• demodulation of AIS messages.

— 9GHz Radar SART (extended set option):

• fast check to make sure 9GHz Radar SART will operate in emergency To in 50 ÷150 μs range;
• fast passed/not passed test;
• audio-control of the sweep signal presence;
• signal level measurement;
• measurement of the signal in frequency range of 9140...9560 MHz;
• number of sweeps in view of graph;
• respond signal duration.

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STU-1

SART Tester

Handy solution for Radar SARTs reliable check

SART Tester STU-1 is designed for accurate and comprehensive verification of any 9GHz SART operation.

The tester provides a much more effective and reliable assessment than the primitive self-test function offered by any SART.

STU-1 checks the 9GHz radar for compliance with the performance standards set out in IMO resolution A.802(19), as well as SOLAS-74/88 regulations.

During testing, the following SART parameters are automatically checked:

- measurement of the response signal duration within the range of 50...150 us;
- measurement of the response signal power level within the range of Pr = 300...950mW;
- counting the number of sweeps and calculation of the distance from SART across a radial line on the radar screen;
- verifying the signal is in the frequency range of 9140...9560 MHZ.

The STU-1 features:

- Any manufacturer's 9GHz SART can be tested;
- Signal reception in the frequency range 9140...9560 MHz;
- Convenient audio control of the sweep signal presence;
- Easy connection to a desktop or laptop to run the tests and process measured data;
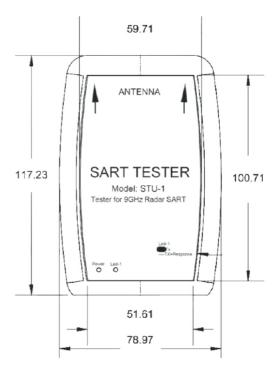- Automatic generation of test reports using GMDSS Multi Software.

Main unit dimensions	**117 x 79 x 25 mm**
Main unit weight	**105 g**
Total dimensions with box	**200 x 120 x 50 mm**
Total weight with box	**250 g**

59.71

ANTENNA

117.23

SART TESTER
Model: STU-1
Tester for 9GHz Radar SART

100.71

Power   Led-1   Led-1   TX+Response

51.61

78.97

gmdsstesters.com/9ghz-sart-tester.html

STU-1
SART Tester

Handy solution for Radar SARTs reliable check

After all, the tester is small, portable and easy to use.

Complete Set:

- SART Tester STU-1 – Main unit
- PC cable (USB-A - micro USB-B)
- Device packing

CE & Calibration Certificates

Technical description and user manual (English)

Software

The SART Tester can be ordered as a separate device or it can be added into the kit of GMDSS Multi Tester MRTS-7M as a part of the extended set.

The STU-1 fits compactly in a watertight & crushproof MRTS-7M case.

For more details, please contact our sales department.

◇◇ GMDSS Multi Software compatible

Measurements of the SART's parameters are made through the broadcast.

All you need to perform the test is to connect the STU-1 to a laptop or desktop and run the software.

The test procedure is managed in the software, the results are instantly displayed on the screen.

After testing, all results can be saved or immediately converted to automatic test reports in IMO-compliant format.

Extended set of MRTS-7M with SART testing unit STU-1 in the crushproof & watertight case

SART testing results

M1

AIS Tester

Survey easy. Test automatically

AIS Tester is a professional equipment for providing mandatory annual testing of the Class A and Class B AIS mobile stations and AIS-SARTs. The unit also enables functional checking of AIS base stations and Aids to Navigation (AtoNs).

All measurements are carried out in accordance with the relevant provisions of IMO and SOLAS, and meet the requirements of the IMO circular letter "Guidelines on annual testing of the AIS unit MSC.1/Circ.1252".

AIS Tester M1 permits to:

· Measure AIS frequencies (on channels 1, 2);

· Measure or estimate the AIS transmitted power (on channels 1, 2);

· Receive and decode the AIS messages;

· Send the data to AIS stations;

· Pass the DSC polling information (channel 70);

· Check AIS response to so called "virtual vessel";

· Transmit and receive the DSC messages of different types for VHF stations;

· Simulate NMEA data transmissions;

· Receive the data from pilot plug or external sensors;

· Store up to 10 measurement results in a nonvolatile memory.

ALL THE IMO REQUIRED MEASUREMENTS are performed with AUTO TEST FUNCTION

One measurement cycle time requires not more than 15 min.

With AIS Tester M1, the work of a surveyor turns into a pleasure. Just connect the M1 to an AIS and enter the Automatic test mode – the device will carry out all the necessary measurements.

❖ GMDSS Multi Software compatible

High convenience of managing test results and simple generation of test reports.

AIS Tester M1 test scope:

· Any AIS Class A and Class B stations

· VHF Radios with DSC channels

· AIS Base Stations

· AIS-SARTs

· Aids to Navigation devices (AtoN)

Technical parameters:

· AIS operational frequencies: 161.975 MHz (channel 1),162.025 MHz (channel 2);

· DSC operational frequency: 156.525 MHz (channel 70);

· Output frequency setting accuracy – ±1ppm;

· Setting accuracy of output frequency – ±1ppm;

· Output power of AIS channel 1 and 2 and channel 70 DSC not less than (-7) dBm (without ext. attenuator), or -53dBm (with ext. attenuator);

· AIS modulation - FM-GMSK;

· AIS channel band rate - 9600 Baud;

· DSC channel band rate - 1200 Baud.

gmdsstesters.com/ais-tester.html

M1

AIS Tester

Survey easy. Test automatically

RF Adapter BNC - UHF,
RF Cables: TNC - TNC, BNC - BNC

Antenna to make measurements
through broadcast

USB Computer cable
(USB A - USB A) 1.5 m

Attenuator

NMEA Cable
(DB9 - NMEA open wires)

Complete Set:

- AIS Tester - Main Unit
- Attenuator
- RF Cables: TNC - TNC, BNC - BNC
- RF Adapter BNC - UHF
- USB Computer cable (USB A - USB A) 1.5 m
- NMEA Cable (DB9 - NMEA open wires)
- Antenna to make measurements through broadcast
- 4 power supply batteries AA type
- Crushproof & watertight case (option)

⧀ **Option**

Crushproof & watertight case

| CE & Calibration Certificates | Technical description and user manual (English) | Software |

Main unit dimensions	195 x 101 x 43 mm
Main unit weight	0.55 kg
Total dimensions with box	280 x 250 x 110 mm
Total weight with box	1.5 kg

BEACON Tester

Reliable and easy to operate
Just test EPIRB and print the report

BEACON Tester 406 02 enables professional checking of marine emergency radio beacons that operate on frequencies 406MHz and 121.5MHz.

Using this tester surveyor is able to provide mandatory annual testing and shore-based maintenance of EPIRBs in accordance with IMO Circulars MSC.1/Circ.1039, 1040.

Device has a simple, user-friendly interface enabling user to provide precise measurements of all beacon's parameters and make complete decoding of any C/S message.

All measurements on 406 MHz and 121.5 MHz channels can be done with tester's antenna (included in standard set) or through optional attenuator (requested separately).

Test results are shown on the display and saved in nonvolatile memory of the instrument.

Complete Set:

· BEACON Tester 406 02 – Main unit

· Antenna

· 4 power supply batteries AA type

· USB computer cable (USB A - USB A) 1.5 m

· Attenuator with RF cables and connectors (option)

· Crushproof & watertight case (option)

◈ GMDSS Multi Software compatible

After the survey, use the software to store test results on a computer and generate test report automatically. There are 3 types of test reports available: general report, annual testing or shore-based maintenance; all three are IMO-compliant. Just insert the vessel's details and print the document.

More details on pages 23-24

Test scope:

· EPIRBs

· PLBs

· S-VDR capsules

· SSAS (Ship Security Alert Systems)

· MoB devices

Main unit dimensions	**195 x 101 x 43 mm**
Main unit weight	**0.55 kg**
Total dimensions with box	**280 x 250 x 110 mm**
Total weight with box	**1.5 kg**

CE & Calibration Certificates

Technical description and user manual (English)

Software

gmdsstesters.com/beacon-tester.html

406 MINI
BEACON Tester

Ensures safety
Being small and intuitive

It is the most small and lightweight Beacon Tester. And with that this tool enables professional checking of all beacons operating on 406MHz and 121MHz frequencies.

The measurements are provided from any mobile device connected to the Tester via Wi-Fi link. Measure frequency and power level on channels 406 MHz and 121.5 MHz.
Complete decoding of Cospas-Sarsat message and 15-digits HEX code.

All test procedures comply with circular letters IMO Circ.1040 and MSC.1/Circ.1039. Generated test reports are IMO-compliant.

All measurements are managed from your mobile device. All platforms are supported: Android, IOs, Windows, macOS, Linux, etc. Intuitive interface of the software enables even a beginner surveyor to provide professional testing. Make sure a beacon is reliable and ready for emergency.

Test report will be generated automatically, just click for a needed one:

Test scope:

· EPIRBs

· PLBs

· S-VDR capsules

· SSAS (Ship Security Alert Systems)

· MoB devices

✧✧ Software

BEACON Tester 406 Mini doesn't require any installations or additional settings to provide testing. Software is preinstalled on the device. No Internet connection is required! No need to download software. The tester has an internal server and creates its own Wi-Fi link for connection to mobile device. After connecting by Wi-Fi, the app will be opened in a standard browser and you can start testing.

Test reports available to generate automatically

gmdsstesters.com/beacon-tester-mini-wi-fi.html

406 MINI

BEACON Tester

Ensures safety
Being small and intuitive

Main unit dimensions	**83 x 55 x 20 mm**
Main unit weight	**120 g**
Total dimensions with box	**200 x 120 x 50 mm**
Total weight with box	**250 g**

Complete Set:

· Beacon Tester 406 Mini – Main unit

· 406 / 121 MHz Antenna

· Wi-Fi Antenna

· Power cable - 1.5 m (USB A - micro-USB)

· USB Power Adapter

· Attenuator with RF cables and connectors (option)

· Crushproof & watertight case (option)

CE & Calibration
Certificates

Technical description
and user manual (English)

GMDSS Multi Software

GMDSS testers advantages are expanded with special Multi Software that enables control, downloading and processing of the test results.

The program is compatible with the most of our Testers:

· GMDSS Tester MRTS-7M
· SART Tester STU-1
· AIS Tester M1
· Beacon Tester 406 02

The testers are connected via USB and the test results can be downloaded and processed.

Processing of the test results is now easier than ever. Software allows to verify all measured data, decode digital message contents received during measurements and automatically generate IMO-compliant test reports.

The software data is automatically uploaded in the cloud for backup purposes and to sync between different workplaces.

Remote control
Here you can manage the testers' operation via PC.

SART Tester
Remote control of SART Tester to perform measurements. Connect the tester first.

DSC Composer of MRTS-7M
Creation of custom DSC messages and uploading them to the tester.

The Remote Control menu provides access to SART Tester and DSC Composer

Software allows to save surveying company information and contacts, upload its logo.
So when generating a test report you can use your company header selected within several templates available.
So your company logo and contacts will be automatically placed on reports.

All test results are grouped by vessels or MMSI codes – an easy way to see surveys' history and compare test results in time. A number of convenient filters are available, like equipment type or date, to make it easy to find previous surveys and process results.

Additional features allow creation of custom DSC messages for special DSC tests.

Software allows to check tester's calibration status and add this information automatically to reports as required by authorities.

A greater convenience is provided by several languages of operation available.

A ready test report example

gmdsstesters.com/downloads.html

Features:

· one convenient surveys database
· test results grouped by vessel, history analysis
· IMO-compliant automatic reports
· company profile, reports with company contacts and logo
· custom DSC composer
· one for all GMDSS testers
· compatible with MAC OS X, Windows OS
· available in 6 languages
· cloud uploading for backup and workplaces sync

The software interface

Video manuals

Every device is accompanied with the paper user's manual, but it's always easier and more clear to learn by videos. Our team makes special videos to help start using the devices easily. On our YouTube channel you may find the video tutorials, as well as the video comparing different testers along with the promo video of our products.

youtube.com/gmdsstesters

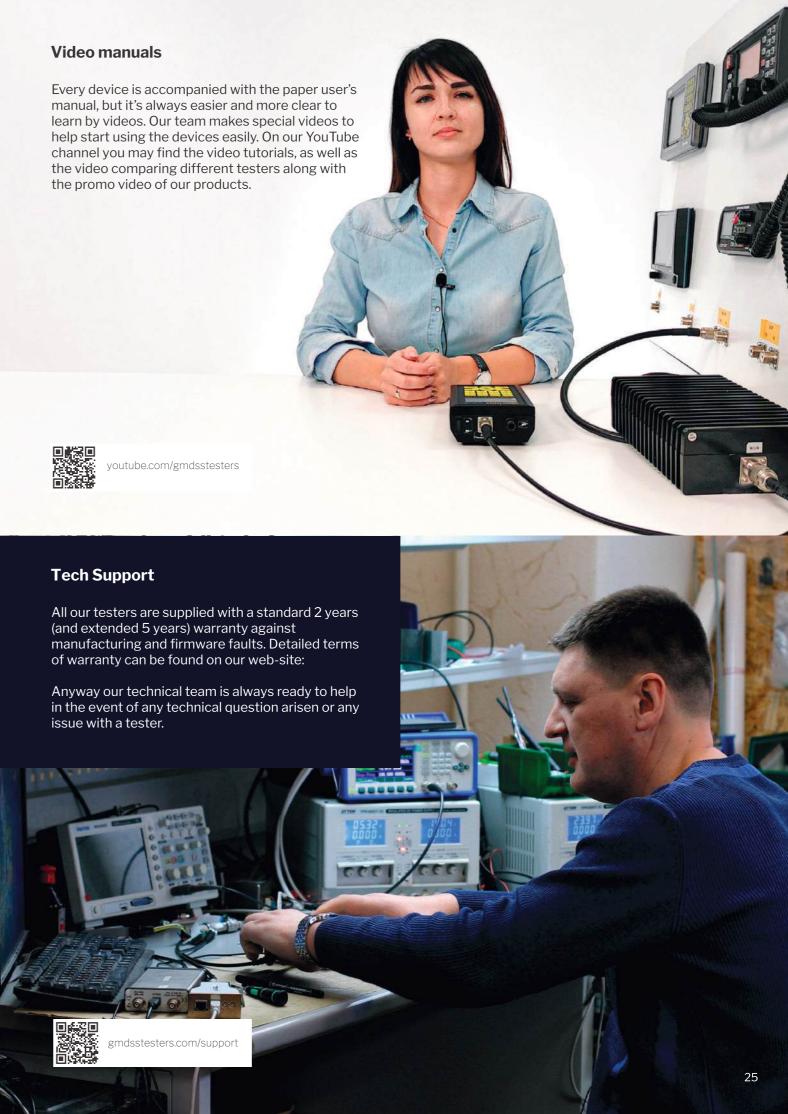# HOW WE CARE

ABOUT TESTERS AFTER SALES

After purchasing a tester you won't be left alone!

Calibration

All testers are supplied with the calibration certificate valid for 2 years. And the calibration is required every 2 years throughout the life-cycle of each tester. The calibration due time is always easy to check up. It is shown on the Tester's screen and on our web-site you will find the Tester Calibration Check resource; by entering the serial number you will see when it's time to contact us for recalibration.

gmdsstesters.com/calibration.html

Tech Support

All our testers are supplied with a standard 2 years (and extended 5 years) warranty against manufacturing and firmware faults. Detailed terms of warranty can be found on our web-site:

Anyway our technical team is always ready to help in the event of any technical question arisen or any issue with a tester.

gmdsstesters.com/support

SMART RADIO .TECH

2022

· Aeromarine SRT opened a subsidiary company in Serbia – Smart Radio Tech

2018

· AIS Tester M1 (next generation)
  GMDSS Multi Tester MRTS-7M entered the market

2015

· Aeromarine SRT foundation. Musson Marine acquired by Aeromarine SRT

2011

· 406 MHz Beacon Monitor

2009

· Release of AIS Tester M1 and AIS-SART

2004-2006

· Development of ELT S
  and ELT AF C/S certification of ELT S

2004

· EPIRB MP-406 - 2nd generation
  (C/S type approval, wheel-mark)

2001

· EPIRB M-406

2023

· Smart Radio Tech Srl, Romania

2019

· SART Tester STU-1 (2nd generation) released

2016

· Release of EPIRB Tester Mini WiFi

2012-2013

· C/S Beacon Simulator BG-105

2010

· Beacon Tester 406 02 (next generation) released
  HRU G5 developed

2007

· Development of MRTS-7
  (MF/HF/VHF DSC Marine Radio Test System)

2005

· Beacon Tester 406 02 released

2002

· SART Tester (device for SART diagnostics and monitoring)

2000

· Musson Marine company was founded
· Release of Device for EPIRB diagnostics and control (406 MHz beacon tester)

About us

SRT Group includes three companies united by the common purpose - to supply the best testing solutions on the global market:

Aeromarine SRT Ltd (Ukraine) is the manufacturing company which produces and technically supports all the supplied testers. Expert in Cospas-Sarsat solutions with 20+ years of specialization in this field, the company combines the time-tested solutions with modern innovations in its products.

Smart Radio Tech d.o.o. (Serbia) is an exclusive global supplier of Aeromarine SRT products. It runs all sales, marketing and shipment operations.

Smart Radio Tech Srl (Romania) is a branch supplying Aeromarine SRT products within the European Union only.

Today, SRT Group is the only one on the global market whose main specification is developing, producing, supplying and supporting the GMDSS and AIS testers.

Our Mission

We strive to contribute to maritime safety by developing reliable test equipment for marine radio surveys, which embodies the principle of 3 "easy":

✓ easy to carry
✓ easy to use
✓ easy to process

The reliability of our equipment is confirmed by the users. The periodical user surveys show that our customers are satisfied with the Aeromarine SRT testers and highly appreciate their functionality. Nevertheless, our specialists keep on developing new features.

Our History

Our company's history starts in 2000 when three radio engineers experienced in the field of Cospas-Sarsat safety solutions founded a research & production company Musson Marine Ltd Ukraine. The main business direction is chosen for the development and production of GMDSS test equipment.

In 2002, Musson Marine Ltd starts presenting its products on the international market.

Over the following years, the range of the products and services expands rapidly, and considerable experience accumulates in PCB engineering, RF design and OEM production.

In 2015, after restructuring, Musson Marine Ltd is rebranded with the name Aeromarine – SRT Ltd. Thus, the company moved to the next stage of its development.

One of the company's most important milestones is the developing and launching into production the unique hand-held GMDSS Multi Tester.

In May, 2022, Smart Radio Tech d.o.o. Serbia is registered. Since then, it has become the only supplier of all Aeromarine SRT production globally.

In 2023, we took the next step - opening of a new branch Smart Radio Tech Srl Romania to simplify the process of purchasing GMDSS testers in the EU.

To be continued...

Some of the industry leading companies that use our equipment in their work

GMDSS Testers

Professional solutions for GMDSS radio survey

We are proud to offer GMDSS Testers, high quality test instruments for conducting mandatory periodical surveys.

Designed and manufactured for professional checking and ease of use, the testers are highly appreciated by radio surveyors all over the world.

Simply Use It

We supply the testers with very friendly software.

Get It Delivered

The test instruments are shipped for free of charge to any location globally.

Make The Best Benefits

We provide a well-balanced pricing policy and support for all our testers, so you can get the best ROI for equipment of this type.

Minimize Your Risks

We provide global two years warranty against manufacture and firmware faults.

Being GMDSS radio surveyor
is a responsible duty

We apply our

24-YEARS EXPERIENCE

in developing of testers to provide you
with a reliable tool for your work

4 500

testers sold

to

75

countries

Over the past year

14 200 SHIPS WORLDWIDE

have been surveyed
using AEROMARINE SRT GMDSS Testers

smartradio.tech

gmdsstesters.com

aeromarinesrt.com