



MRTS-7M

GMDSS MULTI TESTER

For Marine Radio Surveys



One handheld device for full-scale radio inspection

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2.0 Ship length and beam 2.7 Location of GPS an

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Surveyor's favorite tool

MRTS-7M is a professional multifunctional tool for GMDSS surveyors. It provides operational testing of all types of GMDSS equipment, as well as AIS. Any manufacturer's equipment can be checked by this tester.

This device is the quintessence of the company's experience: 22 years of engineering experience in search and rescue technologies; 20 years of specialization in GMDSS testers development.

To make MRTS-7M technologically advanced and user-friendly, we have applied the latest solutions in this field.

Its functionality is constantly being brought in line with changing international requirements. We make sure that the device allows periodic inspections of GMDSS equipment, as well as AIS, in accordance with the latest IMO standards and the requirements of classification societies.

Get an overview of the main features and capabilities of MRTS-7M.



AIS-SART





MF/HF Radio



GMDSS/DSC



Radar SART



PLB



AIS



NBDP



NAVTEX



VHF Radio

Extensive scope of supported equipment to be tested



Use MRTS-7M to carry out the periodic surveys of GMDSS equipment in accordance with all the IMO standards and the classification societies requirements.

- IMO Resolutions A.948 (23) or A.997(25), A.1020(26) (for marine radio stations)
- IMO Circular letter MSC.1/Circ.1252 (for AIS stations)
- IMO Circular MSC.1/Circ.1039 (Rev.1), 1040 (Rev.2) (for C/S beacons)
- IMO Resolution A.802(19) and SOLAS 74/88 (for SARTs)





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Automatic test modes to make all necessary measurements by one command Fits in the cabin baggage during the travels James Adams ᠓ Engl... 🔻

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Ŷ	VESSELS		PID*	Survey Date	Equipment	Channels	MMSI Code	
¢	DOWNLOAD DATA		0	Mar 10, 2022	SART	9GHz	272129000	d
囲	TESTERS		51	Sep 03, 2020	VHF Radio	DSC	972009999	d
	PROFILE		50	Sep 02, 2020	VHF Radio	DSC	972339999	d
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	Smart Radio Tec. Mar Mada Pugna 11,5, 11707, Beignade, Ba Tar 45-40-45 Tar 45-40-45 Web: www.gmdastesters.com Mathematical Statesters.com Automatical Statesters.com Mathematical Statesters.com Mathematical Statesters.com Mathematical Statesters.com Mathematical Statesters.com Mathematical Statesters.com	ette	45 N SYSTER	Sep 02, 2020 Sep 02, 2020	AIS Class A SMART RADIO • TECH	DSC, A, B	201232405	đ
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Status

Automatic generation of test reports in IMO-conforming format - paperwork is reduced to a



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2.7 Location of GPS antenna

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MRTS-7M

GMDSS MULTI TESTER

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







NMEA IN/OUT cable

UHF RF cables set

Complete Set:

- GMDSS Tester MRTS-7M Main unit
- Power Sensor / VSWR Meter (VHF PS1) 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 suitcase
- SART testing unit STU-1 (option)
- CE certificate

Calibration

Certificate



Technical description

and user manual (English)



Software







Power Sensor / VSWR Meter (VHF PS1) 60W



USB A - USB B cable

in the crushproof & watertight suitcase



Telescopic antenna



GMDSS Multi Tester 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 SWR 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.

- 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 406 MHz;
- frequency measurement of 406 MHz and 121.5 MHz signals;
- audio-control of the sweep 121.5 MHz signal presence;
- power level measurement on 406 MHz, 121.5 MHz channels;
- measurement of total transmission time of 406 MHz signal;
- measurement of unmodulated carrier duration of 406 MHz signal;

- estimation of the equivalent radiated power of 406 MHz signal through broadcast;
- measurement of power on AIS homing channel;
- measurement of frequency on AIS homing channel;
- · demodulation of AIS messages.

- 9GHz Radar SART*:

- fast check to make sure
 9 GHz 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.

MRTS-7M allows to:

- generate the RF signals in range of 0.4 – 30 MHz and 118 – 512 MHz, including those with tonal amplitude and frequency modulation;
- measure the signal frequency and power level of narrow-band radio signals in the range of 0.4 – 30 MHz, 118 – 137.5 MHz and 156 – 512 MHz.

Technical specifications

Technical specifications in transmitting mode:

Operational frequencies range:

- MF/HF channel 0.4 30 MHz
- · VHF channel 118 275 MHz

Frequency step:

- · MF/HF channel 0.001 kHz
- VHF channel 1 kHz

Frequency accuracy at +20°C and during two years after calibration: $< \pm 0.3*10-6$

Frequency accuracy in operational temperature range: $< \pm 1*10-6$

Max output level: 0 dBm ±1 dB

Min output level: -93 dBm ± 3 dB

Output level step: 1.0 dB ± 0.3 dB

Output level in Test AIS mode: 0 dBm \pm 1 dB (on the RF IN/OUT connector).

Technical specifications of measuring receiver

Max signal level on RF IN/OUT: not more than 20 dBm or 100 mW;

Attenuation range of input signal by internal attenuator: 93dB;

Input signal operational range on RF IN/OUT: from -90 dBm to -20 dBm

Operational frequencies range:

• MF/HF band 0.4 – 30 MHz

• VHF band 118 – 275 MHz

Frequency step:

 $\cdot\,\text{MF/HF}$ band $\,0.1\,\text{kHz}$

VHF band 1.0 kHz

- Frequency bandwidth on BW-3dB, dB:
- MF/HF Receive DSC and NAVTEX 00 ± 50 Hz
- MF/HF Receiver 3000 ± 70 Hz
- \cdot VHF band (all modes) 12.0 ± 0.3 \cdot kHz

Technical specifications of VHF Power sensor SWR-meter VHFPS1

Max allowed input power level: 60W

Operational frequency range: 30 – 410 MHz

Insertion attenuation between RF-In and MRTS-Output: 63 dB





The most compact GMDSS multi tester with extensive functionality

Main unit dimensions Main unit weight 100 x 200 x 45 mm 0.44 kg

Total dimensions with suitcase: Total weight with suitcase: 303 x 268 x 116 mm 2.5 kg

GMDSS Multi Software

MRTS-7M advantages are expanded by the special GMDSS Multi Software, which allows the surveyor to monitor, download and process test results.

Processing test results is now easier than ever. The Software checks all measured data, decodes the contents of digital messages received during measurements, and automatically generates test reports that meet IMO requirements.

The software features include saving information and contacts of the surveying company, uploading its logo. So, when generating a test report, you can use your company's header selected in several available templates. Thus, your company's logo and contacts will be automatically placed in the reports.

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

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GMDSS Tester	Test	Results			0.000		
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🖞 VESSELS		P/D*	Survey Date	Equipment	Chansels	MMSI Code	
	D	٥	Mar 10, 2022	SART	9GHz	272129000	details so-
-1- DOMINICAD DATA		51	Sep 03. 2020	VHF Radio	DSC	972009999	details >>
TESTERS	0	50	Sep 02, 2020	VHF Radio	DSC	972339999	details >>
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REMOTE CONTROL	0	48	Sep 02, 2020	AIS Class A	DSC, A, B	201232405	details >>
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	0	46	Sep 02, 2020	AIS Class A	DSC, A, B	201232405	details >>



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

The connection between the Tester and the Software is made via USB. The software data can be automatically uploaded to the cloud for backup and synchronization between different workplaces.

The software is also able to check the tester's calibration status and automatically add this information to reports as required by the authorities.

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

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

Features:

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

gmdsstesters.com/downloads.htn



The software interface



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

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)

Aeromarine SRT Profile

Our History

The roots of Aeromarine SRT go back to Musson Marine company, founded in 2000 in Ukraine. That year, three radio engineers with experience in the field of Cospas-Sarsat safety solutions founded a research & production company. The development and production of GMDSS test equipment was chosen as the main business direction. Since 2002, the company has been presenting its products on the international market.

Over the years, the range of our products and services has expanded, considerable experience has been accumulated in PCB engineering and RF design, OEM production.

One of its important milestones was the development of the first (and so far the only one) hand-held GMDSS Multi Tester.

Today, Aeromarine SRT is one of the world's leading suppliers of GMDSS test equipment.

In 2022, we registered a company in Serbia, called Smart Radio Tech d.o.o.

Our Products

We produce the entire line of testing equipment for marine radio surveyors: single-purpose testers, as well as a universal GMDSS Multi Tester. All testers comply with the requirements of IMO and SOLAS and are suitable for checking any manufacturer's shipboard equipment subject to mandatory GMDSS and AIS inspection. The key features of Aeromarine SRT devices are a user-friendly interface, compact size and advanced software that allows inspectors to save time by generating reports automatically and printing them in IMO compatible format.

We are proud of the reliability of our equipment. According to user surveys that we periodically conduct, our customers highly appreciate this property of Aeromarine SRT testers. However, our engineers are not going to stop at what has been achieved and are constantly working to further improve this characteristic.

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



To buy or not to buy

Investments in equipment are an integral part of the company's capital expenditures for conducting its activities.

Why MRTS-7M? Our answer is as follows - to save the time you spend on GMDSS surveys. Your time is your earnings. There is a lot of routine in the work of a radio surveyor - conducting numerous tests and measurements, paperwork, etc.

Due to the automation of many processes, MRTS-7M minimizes this, freeing up your time for other orders. Coupled with the high reliability of the device and a top-quality after-sales service, you get a tool with a fast payback period and great prospects in use.

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What do MRTS-7M users say:

Nicolas Hawa

Supervisor Service Engineer AZIMUTH RADIO TECHNOLOGIES

Aeromarine SRT MRTS-7M is a trustworthy instrument that has been used by our Service Engineers in all our attendances onboard. High reliability, light design, quality performance and accurate results. A trustful partner to our services, because the Correct Results Matter to us.

Willem Auret

Technical Director CWN Marine B.V., Soremar Group

Especially the MRTS-7M in combination with the STU-1 is a revolution for radio surveyors. It all fits into a very small, light and rugged case, perfect for carrying on board. The cloud software with offline capabilities and pre-made test reports save hours of manual paperwork at every survey.

TUẤN NGHIÊM

Engineer Codar Singapore Group

Very compact tester. The support is also great. Thanks Aeromarine SRT!

Brian Coffin

President Aquatic Navigation, Inc

The device is very portable and versatile. The MRTS-7M has been such a great addition to our testing of GMDSS radio stations.

The MRTS-7M tests everything that is required of me for the GMDSS survey. It fits comfortably in my laptop case. No longer do I have to carry very heavy testing tools up to a bridge/ wheelhouse. I Highly recommend this device for any company that does GMDSS.

V V



Simply Use It

MRTS-7M has a very friendly interface and modern PC software.



Get It Delivered

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



Make The Best Benefits

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



Minimize Your Risks

We provide a standard two years warranty against manufacture and firmware faults.



Website gmdsstesters.com



Request the GMDSS Multi Tester MRTS-7M



Video tutorials on MRTS-7M