



SMART
RADIO
• TECH

GMDSS MULTI TESTER

For Marine Radio Surveys



One handheld device
for full-scale GMDSS and AIS inspection

Form Of Ship

Part Of Registry

(1) For 1st Instrument C

(2) For 2nd Instrument C

(3) For 3rd Instrument C

(4) For 4th Instrument C

Expiry Date Of Battery

Expiry Date Of HRU

for full-

Smart Radio Tech
 Blye Marina Puffin TIS. 1
 Tel: 45-40-45
 Email: info@companyweb.2
 Web: www.gracktestats.com

AUTO

Name of ship/call sign
 MMSI number
 Port of registry
 IMO Number
 Gross tonnage
 Date of keel

1. Installation details

Item

- 1.1 AIS transponder type
- 1.2 Type of power source
- 1.3 Initial installation configuration, no. of antennas
- 1.4 Drawings provided? (Antenna, AIS, etc.)
- 1.5 Main source of electrical power
- 1.6 Emergency source of electrical power
- 1.7 Capacity to be verified if the AIS is
- 1.8 Pilot plug near pilot operating position
- 1.9 120VAC permitted near pilot plug? (P)

2. AIS programming - Static information

Item

- 2.1 MMSI number
- 2.2 IMO Number
- 2.3 Radio call sign
- 2.4 Name of ship
- 2.5 Type of ship
- 2.6 Ship length and beam
- 2.7 Location of GPS



gmdsstesters.com/gmdss-tester-mrts-7m.html

Surveyor's favorite tool

MRTS-7M is a professional multifunctional tool for Marine Radio 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: 23 years of engineering experience in search and rescue technologies; 21 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



PLB



AIS EPIRB



AIS



MF/HF Radio



NBDP



GMDSS/DSC



NAVTEX



Radar SART



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)

Small size and light weight — no bulky testers onboard!



Comes in a crushproof and watertight hard suitcase




Automatic test modes to make all necessary measurements by one command






Fits in the cabin baggage during the travels






AEROMARINE SRT
 Smart Radio Technologies


GMDSS Test Equipment
 Testers for Marine Radios, EPIRBs, SARTs and AIS


James Adams 
 Engli... 



GMDSS Tester



TEST RESULTS



 VESSELS


 DOWNLOAD DATA


 TESTERS



 PROFILE


 REMOTE CONTROL


 UPDATES

Test Results


Database of all saved measurements during radio surveys



<input type="checkbox"/>	PID*	Survey Date	Equipment	Channels	MMSI Code	
<input type="checkbox"/>	0	Mar 10, 2022	SART	9GHz	272129000	details >>
<input type="checkbox"/>	51	Sep 03, 2020	VHF Radio	DSC	972009999	details >>
<input type="checkbox"/>	50	Sep 02, 2020	VHF Radio	DSC	972339999	details >>
<input type="checkbox"/>	49	Sep 02, 2020	AIS Class A	DSC, A, B	201232405	details >>
<input type="checkbox"/>	48	Sep 02, 2020				details >>
<input type="checkbox"/>	47	Sep 02, 2020				details >>
<input type="checkbox"/>	46	Sep 02, 2020				details >>
<input type="checkbox"/>	45	Sep 02, 2020	AIS Class A	DSC, A, B	201232405	details >>

Advanced software for Windows and macOS with cloud storage of your data

Smart Radio Tech
 Bdr: Mihaila Pupina 115, 11070, Belgrade, Serbia
 Tel: 45-40-45
 Email: info@companyweb.io
 Web: www.gmdsstester.com


SMART RADIO TECH

AUTOMATIC IDENTIFICATION SYSTEM (AIS) TEST REPORT

Name of ship/call sign	Dimiriy-Kanemir
MMSI number	272129000
Port of registry	Ukraine
IMO Number	7329924
Gross tonnage	
Date of keel	

1. Installation details

Item	Status
1.1 AIS transponder type	AIS Class A
1.2 Type approval certificate	
1.3 Initial installation configuration report on board?	
1.4 Drawings provided? (Antenna-, AIS-arrangement and block diagram)	
1.5 Main source of electrical power	
1.6 Emergency source of electrical power	
1.7 Capacity to be verified if the AIS is connected to a battery	
1.8 Pilot plug near pilots operating position?	
1.9 120VAC provided near pilot plug? (Panama and St. Lawrence requirement)	

2. AIS programming - Static information

Item	Status
2.1 MMSI number	272129000
2.2 IMO Number	7329924
2.3 Radio call sign	
2.4 Name of ship	
2.5 Type of ship	
2.6 Ship length and beam	
2.7 Location of GPS antenna	

3. AIS programming - Dynamic information

Item	Status
3.1 Ships position with accuracy and integrity status (Source: GNSS)	Longitude: 101° 0.0' E Latitude: 91° 0.0' N

Automatic generation of test reports in IMO-compliant format — paperwork is reduced to a minimum


ANTENNA

GMDSS TESTER
 Charge ON Ext. Pow. ON

```

=== MAIN MENU ===
TEST UHF radio
TEST MF/HF radio
TEST AIS
TEST EPIRB
TEST NAUTEX
TEST NMEA
  
```

MARINE RADIO TEST SET
 MODEL MRTS-7M

1	2	3	4
5	6	7	8
9	0	F1	F2
-			+
Esc		Enter	

LCD with backlight for work in any light conditions

20-button keypad, which provides utter comfort on operation

The MRTS-7M standard set can be expanded by adding optional units



1. MF/HF Power Sensor and VSWR Meter PS-2

- enables measuring of MF/HF stations up to 500 W
- allows to test not only the radio station's parameters, but also to check the antenna feeder by measuring the VSWR which is a fully new function
- attenuates the signal sent from the MF/HF radio station so that it replaces the attenuator used previously for MF/HF tests.

The tandem of MRTS-7M & PS-2 measures:

- carrier frequency of the signal
- forward and reflected power level
- frequency deviation
- and the VSWR of the antenna

The set of MRTS-7M with VHF Power Sensor PS-1 and MF/HF Power Sensor PS-2 enables detailed and accurate testing of all types of marine radios.



2. The SART testing tool STU-1



- enables easy and fast testing of any 9GHz SART
- can be ordered as a separate device or added into the kit of GMDSS Multi Tester MRTS-7M as a part of the extended set
- fits compactly in a watertight & crushproof MRTS-7M suitcase
- the test procedure is managed in the GMDSS Multi 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



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



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



Telescopic antenna

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)



CE & Calibration
Certificates



Technical description
and user manual (English)



Software



VHF Power Sensor & VSWR Meter, PS-1

Option



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

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: $\pm 0.3 \cdot 10^{-6}$

Frequency accuracy in operational temperature range: $\pm 1 \cdot 10^{-6}$

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 ± 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:

- MF/HF band 0.1 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
- VHF band (all modes) 12.0 ± 0.3 kHz

Technical specifications of VHF Power sensor and VSWR meter PS-1

Max allowed input power level: 60W

Operational frequency range: 30 – 410 MHz

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

Technical specifications of MF/HF Power Sensor and VSWR Meter PS-2

Maximum input power: 500 W

Operating frequency range: 0.49 - 30 MHz

The attenuation from the Power Sensor input and VSWR to the Tester Input/Output is 81.4 dB.

It is automatically considered in conducted measurements of transmitter output power and receiver sensitivity.

The transmission of DSC messages to the antenna can be checked by using the message in format Individual Call, Test or Routine.

Dimensions

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

Total dimensions with case	Total weight with case
350 x 400 x 170 mm	4 kg

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 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 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:

- 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 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 (extended set option):

- 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.

The tester is capable to transmit and receive the signals by:

- broadcast antenna
- direct connection to radiofrequency In/Out
- direct connection by means of cables (conductive measurements)
- and through Power Sensor & VSWR Meter

GMDSS Multi Software

for managing test results on PC

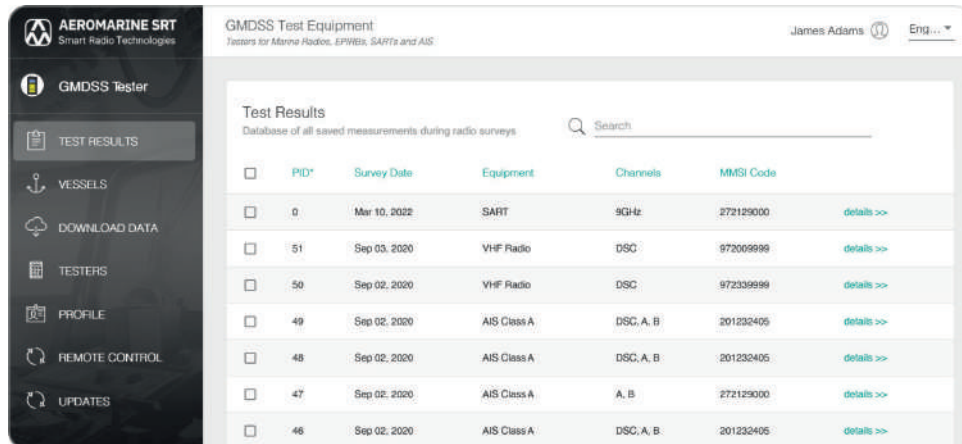
MRTS-7M advantages are expanded by the special GMDSS Multi Software, which allows the surveyor to monitor, download and process test results.

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.

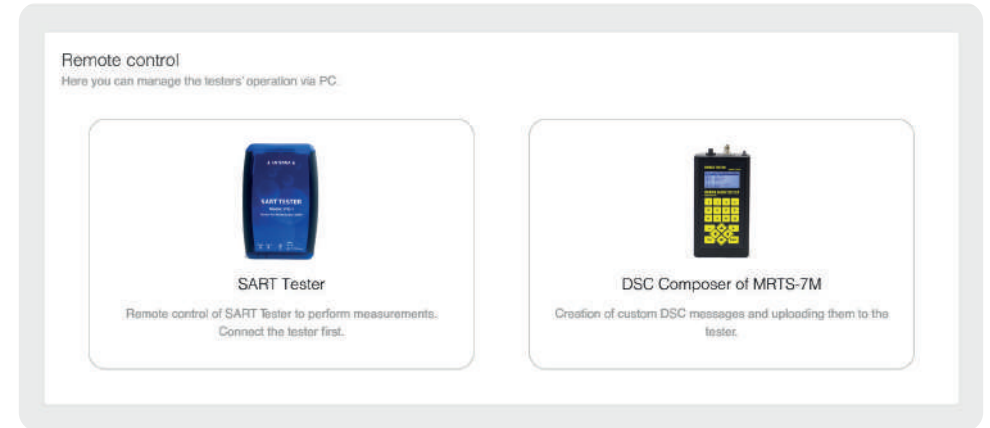
All test results are grouped by vessels or MMSI codes – an easy way to view surveys' history and compare test results over time. A number of convenient filters are available, such as equipment type or date, to make it easier to find previous surveys and process the results.



The screenshot shows the 'GMDSS Test Equipment' window of the software. It features a sidebar with navigation options: GMDSS Tester, TEST RESULTS (selected), VESSELS, DOWNLOAD DATA, TESTERS, PROFILE, REMOTE CONTROL, and UPDATES. The main area displays a table titled 'Test Results' with the subtitle 'Database of all saved measurements during radio surveys'. The table has columns for PID*, Survey Date, Equipment, Channels, and MMSI Code. Each row includes a checkbox, a PID number, a survey date, equipment details, channel information, and an MMSI code, with a 'details >>' link for each entry.

	PID*	Survey Date	Equipment	Channels	MMSI Code	
<input type="checkbox"/>	0	Mar 10, 2022	SART	9GHz	272129000	details >>
<input type="checkbox"/>	51	Sep 03, 2020	VHF Radio	DSC	972009999	details >>
<input type="checkbox"/>	50	Sep 02, 2020	VHF Radio	DSC	972339999	details >>
<input type="checkbox"/>	49	Sep 02, 2020	AIS Class A	DSC, A, B	201232405	details >>
<input type="checkbox"/>	48	Sep 02, 2020	AIS Class A	DSC, A, B	201232405	details >>
<input type="checkbox"/>	47	Sep 02, 2020	AIS Class A	A, B	272129000	details >>
<input type="checkbox"/>	46	Sep 02, 2020	AIS Class A	DSC, A, B	201232405	details >>

The software interface



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 of GMDSS Multi Software:

- 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.html





2022 <ul style="list-style-type: none"> Aeromarine SRT opened a subsidiary company in Serbia – Smart Radio Tech 	2023 <ul style="list-style-type: none"> Smart Radio Tech Srl branch is opened in Romania
2018 <ul style="list-style-type: none"> AIS Tester M1 (next generation) GMDSS Multi Tester MRTS-7M entered the market 	2019 <ul style="list-style-type: none"> SART Tester STU-1 (2nd generation) released
2015 <ul style="list-style-type: none"> Aeromarine SRT foundation. Musson Marine acquired by Aeromarine SRT 	2016 <ul style="list-style-type: none"> Release of EPIRB Tester Mini WiFi
2011 <ul style="list-style-type: none"> 406 MHz Beacon Monitor 	2012-2013 <ul style="list-style-type: none"> C/S Beacon Simulator BG-105
2009 <ul style="list-style-type: none"> Release of AIS Tester M1 and AIS-SART 	2010 <ul style="list-style-type: none"> Beacon Tester 406 02 (next generation) released HRU G5 developed
2004-2006 <ul style="list-style-type: none"> Development of ELT S and ELT AF C/S certification of ELT S 	2007 <ul style="list-style-type: none"> Development of MRTS-7 (MF/HF/VHF DSC Marine Radio Test System)
2004 <ul style="list-style-type: none"> EPIRB MP-406 - 2nd generation (C/S type approval, wheel-mark) 	2005 <ul style="list-style-type: none"> Beacon Tester 406 02 released
2001 <ul style="list-style-type: none"> EPIRB M-406 	2002 <ul style="list-style-type: none"> SART Tester (device for SART diagnostics and monitoring) 2000 <ul style="list-style-type: none"> Musson Marine company was founded Release of Device for EPIRB diagnostics and control (406 MHz beacon tester)

About us

Company structure

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.

Achievements and goals

We produce the entire line of testing equipment for marine radio surveyors: single-purpose testers, as well as a universal GMDSS Multi Tester.

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-compliant 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.

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.

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



To buy or not to buy

Investments in equipment are an integral part of any company's capital expenditures for good conducting its activities. Surely, these investments should be returned in a better manner.

Why MRTS-7M can be a good return of your investments? Our answer is as follows - because it can save the time you spend on each GMDSS survey. The work of a radio surveyor includes a lot of routine such as conducting numerous tests and measurements, paperwork, etc. Meanwhile, your time is your earnings.

Thanks to the automation of many processes, MRTS-7M minimizes this routine, freeing up your time for the next survey orders. Thus, together 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.

What do MRTS-7M users say:

Rashen Pachkowdie

Service Engineer
Radio Holland

”

I love this tester

”

Anand Ghosh

Technical Director
EQUINOX MARITIME SOLUTIONS PVT LTD

”

It's very useful especially its compact and all-in-one function

”

Frederick AryeeQuaye Aryee

Technical Service Engineer
International Maritime Group

”

My love for this equipment can't be even expressed. It works so well for all GMDSS inspection jobs, they are the best in the industry!

”

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.

”

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.

”

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Simply Use It

MRTS-7M has a very friendly interface and works with up-to-date 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 2-year warranty against manufacture and firmware faults.



Website
gmdsstesters.com



Request the
GMDSS Multi Tester MRTS-7M



Video tutorials
on MRTS-7M