

NMEA MAKES CONNECTIONS

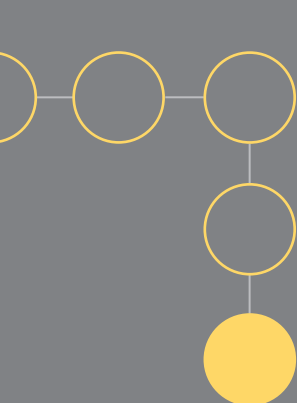


DIY GUIDE TO QUALITY VHF INSTALLATIONS



NATIONAL MARINE ELECTRONICS ASSOCIATION





For 55 years the NMEA has created standards and professional installation guidelines for marine electronics to make boating safer and more fun.

VHF DIY GUIDE



The intention of this pamphlet is to assist you in properly installing your Marine VHF radio as this single piece of equipment could save your life. This is an important step in improving your boating safety and enjoyment. This pamphlet compliments your VHF manufacturers installation manual.

The best VHF radio will be rendered useless if it is not properly installed. Appropriate antennas, mounts and installation materials will pay dividends for years to come.

The NMEA website provides you with resources for obtaining MMSI and license information. If you determine this to be more of a job than you can safely achieve, the NMEA website www.nmea.org can help you find a qualified marine electronics dealer/installer in your area.

ABOUT THE NMEA

The mission of the National Marine Electronics Association is to be a worldwide, self-sustaining organization committed to enhancing the technology and safety of marine electronics.

The NMEA offers various training courses based on NMEA installation standards. See www.nmea.org for more information.

MEMBERS OF THE NMEA INCLUDE:

- Electronics manufacturers
- Electronics dealers & installers
- Electronics distributors
- Marine Retail Stores
- Boat builders
- Marine trades
- Manufacturers' representatives

NMEA technical and training standards are used internationally for navigation, communications, entertainment, and systems integration.



VHF DIY GUIDE

GETTING STARTED

There are three key elements to a proper & reliable VHF installation:

1. Antenna placement.
2. Antenna cabling, routing & connectors.
3. DC power requirements. See chart for details.

Here are the steps to get you started:

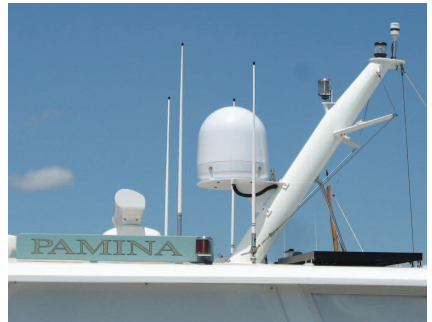
1. Select DC power cable & connectors based on radio location.
2. Obtain proper MMSI# see www.nmea.org.
3. Interface to your GPS for DSC (Digital Selective Calling) distress calls.
4. Select antenna, mount(s), cable & connectors based on radio location.

VHF ANTENNA & MOUNT PLACEMENT

VHF radio signals are line of sight.
Range increases with antenna height.
Select an antenna mount suited for the specific antenna and vessel type.

Recommended Antenna spacing:
3 feet between GPS & VHF antennas.
2 feet between Radar & VHF antennas.
4 feet separation between two VHF antennas.

Use stainless steel fasteners, clamshell covers, and marine grade silicone where any exterior holes are drilled to prevent water intrusion.



ANTENNA CABLES & CONNECTORS



Improper antenna connector and cable installation will degrade VHF performance and can possibly damage the radio.

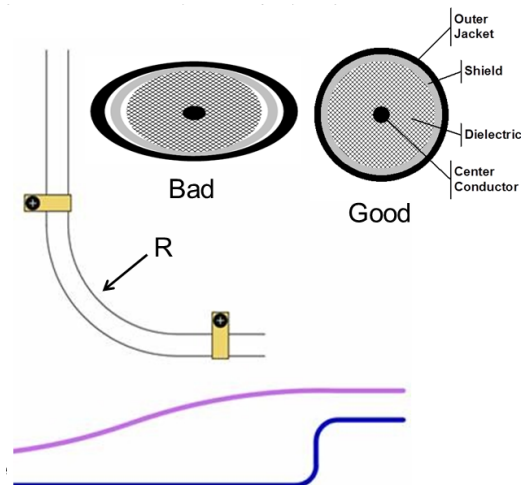
Select coax cable type based on overall coax cable length.

The standard coaxial connector type is PL259.

Route VHF coaxial cable away from power and data cables to reduce Electro-Magnetic Interference.

Follow coaxial cable bend radius guidelines based on the below:

Cable Type	Minimum Bend Radius (in)
RG58U	2.0"
RG8X	2.4"
RG8U	4.5"



route coaxial cables using gentle S-curves

WHY IS DSC NEEDED?

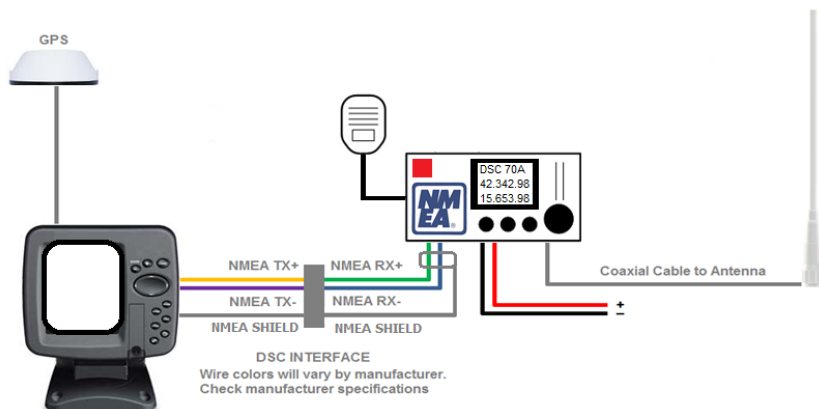
The **RED DISTRESS** button on your VHF Radio is used for initiating an automated distress call. When your GPS and vessel's MMSI* (your vessel's unique identifier) number are properly interfaced and programmed, your VHF Radio broadcasts your position and identity to all other DSC** radios within range, including the Coast Guard.

* Maritime Mobile Service Identity

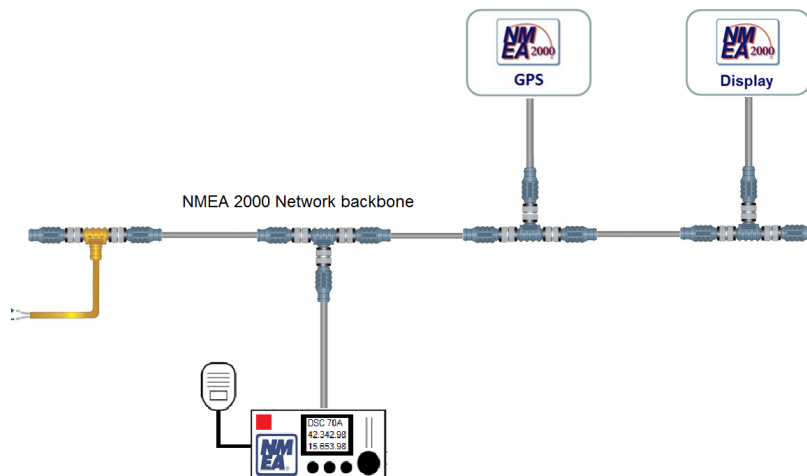
**Digital Selective Calling



NMEA 0183 DSC INTERFACE (RS-422)



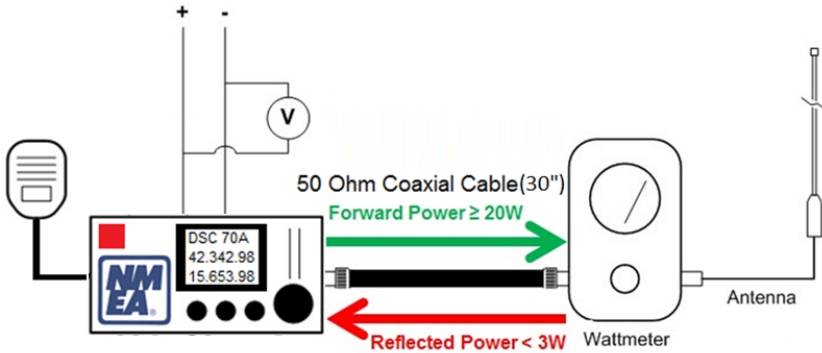
NMEA 2000 DSC INTERFACE



VHF PERFORMANCE VERIFICATION

Measure the DC supply voltage at VHF while transmitting on high power using a volt meter. Voltage should not drop below 12.6 V.

Measure the 25 watts of energy transmitted from VHF to your antenna is measured in the following manner using a wattmeter*



The wattmeter should indicate the following:

≥ 20 Watts Forward Power

≤ 3 Watts Reflected

Check receiver by listening for local VHF traffic and distant NOAA weather channels.

Perform Radio Check at a substantial distance.

Check local area for automated test services-see www.nmea.org

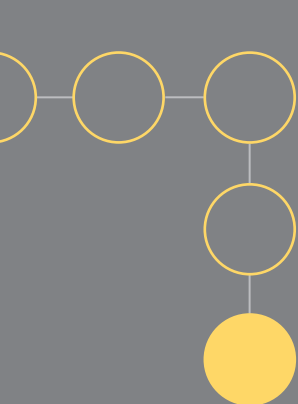
It is illegal to use Channel 16 for radio checks

Use VHF channel 16 for distress & calling ONLY

Confirm correct GPS position is shown on VHF.

*Consult your qualified marine electronics dealer/installer.





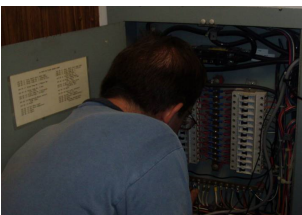
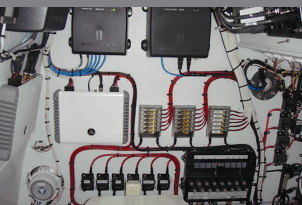
NMEA MASTER DEALERS

When you see the Master Dealer logo, you can be assured that you will receive the best service, best equipment, and best advice in the marine industry, from top industry experts.

NMEA's Master Dealers are dedicated to technical proficiency, ongoing education, and customer service. Master Dealers provide their boating customers with a Consumer Bill of Rights to assure that they walk away confident that they have received the best possible advice and service.

Whether you need to outfit your new boat with the best in marine electronics, or upgrade your current electronics, NMEA Master Dealers and the NMEA dealer network can provide the expertise you need.

To find NMEA Master Dealers, see the NMEA dealer list at www.nmea.org and www.marineelectronicsjournal.com or call the NMEA office at (410) 975 9425.



NMEA STANDARDS & TRAINING

NMEA 2000®

Marine standard bus for high-speed data exchange

NMEA 0183

Marine standard for serial data exchange

NMEA 0400

Marine electronics installation standard

INSTALLER TRAINING COURSES

Basic & Advanced Installer courses

NMEA 2000 Networking course

CMET Certification

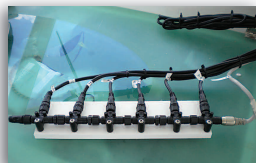
NMEA-certified marine electronics technician testing

Marine Electronics Journal

Industry bi-monthly magazine exclusively for NMEA members—"an essential read"

MEJ Annual Buyer's Guide

Annual marine electronics guide for boating consumers and NMEA members



Join Today!

FOR MORE INFORMATION ABOUT THE NMEA AND HOW TO ENJOY THE BENEFITS OF MEMBERSHIP, CONTACT:

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www.nmea.org

