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GENERAL INTRODUCTION TO B&G NETWORK

The B&G Network range of instruments is designed to be used as individual units or connected together to form an integrated navigational system. A single network cable is used to carry data and power between units. The latest technology and screened cables throughout the Network System ensure the ultimate protection from interference between units and other systems. All Network instruments can be linked to Network PILOT, Network CHART, Network GPSPlus or via NMEA 0183 (v1.5) to other navigational equipment.

INSTRUMENTS	NAVIGATIONAL AIDS
Network ENGINE	Network GPSPlus
Network SPEED	Network Nav
Network DEPTH	Network CHART
Network QUAD	
Network WIND	
Network TACK	
Network DATA	

AUTOPILOTS	COMMUNICATIONS
Network Pilot	Network VHF (USA only)

INTRODUCTION TO NETWORK VHF

The Network VHF is a 25-watt transmitter which includes a control/display head, matching speaker and remote microphone with up and down channel control.

The unit is capable of operating on all US, Canadian & International Channels. It can receive 8 NOAA and 2 Canadian weather channels.

This VHF meets US Coast Guard standards for waterproof design (USCG CFR 46).

Important features:

- All channel Scanning
- One touch channel 16
- Dual Watch
- Large, clear backlit LCD readout
- Backlit keypad for ease of operation

In addition, the transceiver contains both a powerful hailer and intercom system that may be used with optional speakers.

The unique design lets you mount the unit where you need it most and matches the complete range of B&G instruments.
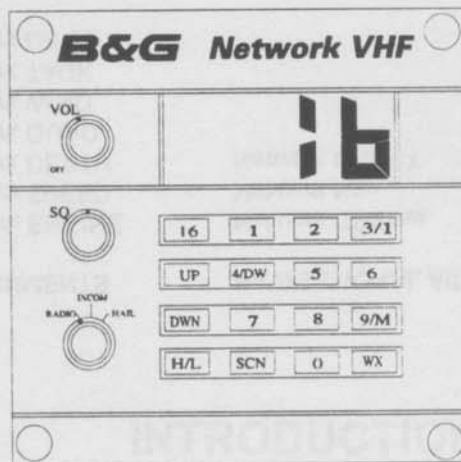
SPECIFICATIONS

TRANSMITTER

Channels 54
Frequency Range 156.050 to 157.425 MHz
Frequency Stability 0.001%
Channel Spacing 25 KHz
Temperature Range -25°C to +50°C
Antenna Impedance 50 ohms
Spurious & Harmonics
  Emissions 65dB
Transmit PowerLow 1W - High 25W
Modulation 16F3
Power Requirements1 2V DC, Negative grnd.
Current Drain Low Power: 1.5 Amps
High Power: 6 Amps
Microphone Type Dynamic

RECEIVER

Channels 84
Frequency Range 156.050 to 163.275 Mhz
Sensitivity 0.25 uV at 12 dB SINAD
Squelch SensitivityThreshold 0.35 uV
Tight 1.0 uV
Spurious and Image
  Rejection 65 dB
Intermodulation Rejection 65 dB
Audio Output 5 watts into 8 ohms
10% distortion
Receiver Current 1.0 Amps at 12V DC
Weight 2 lbs.
Dimensions 4.3"H x 4.3"W x 4.8"D
THIS MARINE VHF/FM RADIOTELEPHONE IS FCC TYPE ACCEPTED FOR MARINE/MOBILE USE UNDER PART 80, FOR VOLUNTARILY FITTED VESSELS. NO LICENSED TECH. REQUIRED FOR INSTALLATION PROVIDING PRE-TUNING IS NOT CHANGED.

LICENSE REQUIREMENTS

The FCC requires a ship station license for any vessel on which a radiotelephone is installed. The following procedure should be followed to obtain a ship station license.

It is necessary for you to fill out FCC Form 506, an application for ship station license, sign it and mail to FEDERAL COMMUNICATIONS COMMISSION, GETTYSBURG, PENNSYLVANIA 17325.

You may operate your VHF.FM marine radio under a temporary license Form 506A. You should read FCC Form 506A carefully to determine whether you meet all the requirements for holding a temporary permit. After reading Form 506A, you should sign the form and indicate the date of mailing. DO NOT MAIL THE TEMPORARY PERMIT. Keep it in your possession until notification is received from the FCC that the regular license application has been approved. This temporary form is valid for 60 days.

Determine a temporary call sign to be used with the temporary permit, and enter this call sign in the appropriate place on Form 506A.

These forms are available at any FCC field office, or by writing to the Federal Communications Commission.

INSTALLATION

EQUIPMENT SUPPLIED

- VHF Radiotelephone with Power Cable, Output cable, Microphone Cable.
- Waterproof Microphone
- Microphone Mounting Plate w/cable
- Waterproof Speaker w/cable
- Mounting Hardware

OPTIONAL EQUIPMENT

- Hailer Horn
- Intercom Speaker

MOUNTING

Tape the template provided onto the surface and mark the center. Using this center mark, cut out area indicated in the mounting surface.

Feed all the wires coming from the back of the Network VHF through the bulkhead gasket and then through the hole in the panel.
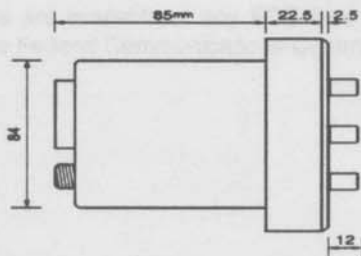
Position the unit on the panel and using the unit itself as guide, drill four 1/8 inch (3mm) holes, one in each corner, into the mounting surface. Be sure the unit is rotated to line up correctly with other units and/or the dashboard molding before drilling these holes. It may help to mark the holes with the unit in place, then set it aside when drilling the holes.

It is best to apply a thin bead of noncorrosive silicone bedding to the back of the unit to prevent water from entering the mounting surface.

Secure the Network VHF to the mounting surface with the four stainless screws provided. Do not overtighten.

After the VHF is mounted, press the four silicone plugs (provided) into the screw holes on the face of the radio. This will hide the screws and provide a clean look to the Network VHF.

SPEAKER MOUNTING

Select a location for the external speaker provided with the Network VHF. This location should be at least 3-4 feet (1 meter) away from any compass on the vessel, including autopilots, sat-navs, etc.. The chosen location should position the speaker in such a way as to assure that it can be easily heard by the operator while the vessel is underway.

Tape the template provided onto the mounting surface and mark the center. Using this center mark, drill or cut a 4inch (105mm) hole into the mounting surface.

Feed the wire coming from the back of the speaker through the bulkhead gasket, and then through the 4 inch hole in the panel.

Carefully position the speaker on the panel and using the speaker itself as a guide, drill four 1/8 inch (3mm) holes, one in each corner, into the mounting surface. Be sure the speaker is rotated to line up correctly with other units and/or the dashboard molding before drilling these holes. It may help to mark the holes with the speaker in place, then set the speaker aside when drilling the holes.

It is best to apply a thin bead of noncorrosive silicone bedding to the back of the unit to prevent water from entering the mounting surface.

Follow the same procedures utilized to secure the transceiver.

MICROPHONE MOUNTING PLATE

Select a convenient location on the instrument panel for the microphone and connecting it to the Network VHF. The microphone connecting cable is permanently attached to the back of the VHF. This cable is approximately 10 inches in length and has an eight pin male connector attached to it. This is designed to connect with the 9 foot cable coming from the Microphone Mounting Plate (supplied) and to mate with the eight pin female connector on the end of the cable attached to the microphone.

A single 3/4 inch (19mm) hole must be located in such a position that the connector attached to the VHF cable will reach and pass through the hole. A brushed stainless steel plate is provided to which the connector from the VHF is attached.

Remove the nut and the washer from the connector, pass the connector through the hole in the supplied plate from the back of the plate, and first place the washer and then the threaded nut onto the connector. Gently tighten to secure the nut. Do not overtighten.
Coil any excess wire. Do not cut the cable!!!

Secure the plate to the bulkhead using the sheet metal screws provided.

Plug the microphone into the connector just installed and place the microphone into the hanger on the plate.

ELECTRICAL WIRING

This unit is designed to operate from a 12V Negative Ground system only. Do not connect the unit to a positive ground or a floating ground system.

The power cable contains an in-line fuse to protect both the unit and the power source. In addition, the unit contains a special protective circuit to prevent excessive damage in case of reversed polarity or improper wiring of unit. The fuse will normally blow when polarity is reversed.

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NOTE:When a fuse blows, check the protective circuit to be sure that it is not damaged. Do not install a higher rated fuse. Use a 7 Amp 3AG type fuse.

The power cable is color coded for easy identification. Connect the White wire to the (+) positive terminal and the Black wire to the (-) negative terminal of the battery.

ANTENNA LOCATION & MOUNTING

This radio requires a 50 ohm VHF/FM marine antenna (not supplied). Consult with your marine dealer to determine the best antenna for your type of boat. Mount the antenna as high as possible, on the mast head or cabin top. It should be as high as practical for the best performance and longest range.
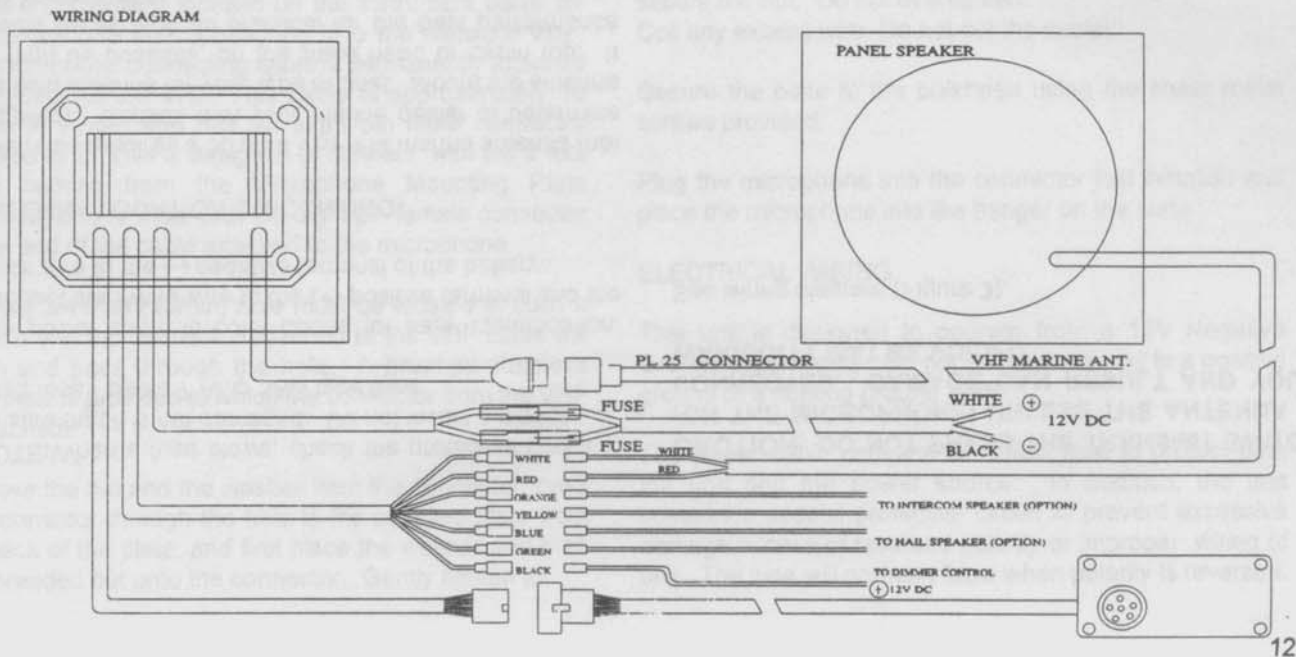
ANTENNA CONNECTION

After installing the antenna, route the cable to the back of the radio and connect it to the antenna connector.

CAUTION: DO NOT PRESS THE TRANSMIT SWITCH (ON THE MICROPHONE) UNLESS THE ANTENNA IS CONNECTED. DAMAGE CAN RESULT AND YOUR WARRANTY MAT BE VOIDED

See wiring diagram (Figure 3).

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WIRING DIAGRAM

FIGURE 3

WIRING DIAGRAM

PANEL SPEAKER

PL 25 CONNECTOR — VHF MARINE ANT.

FUSE — WHITE ⊕ 12V DC
FUSE — BLACK ⊖

WHITE
RED

WHITE
RED
ORANGE
YELLOW — TO INTERCOM SPEAKER (OPTION)
BLUE — TO HAIL SPEAKER (OPTION)
GREEN
BLACK — TO DIMMER CONTROL
⊕ 12V DC

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CONTROLS AND CONNECTORS

1. **ON-OFF/VOLUME CONTROL**
   Applies power to the unit and adjusts desired level of sound.

2. **SQUELCH CONTROL**
   Turn the Squelch Control clockwise until the background noise is not present. When a signal is received it will clear of background noise.

3. **MODE SELECTOR**
   Use to select the desired mode (radio, hail, incom).

4. **LCD CHANNEL/FUNCTION DISPLAY**
   Shows channel number, power level, scan M (memory scanning), Wx and Tx modes.

5. **PROGRAM KEYPAD**
   Use to select desired channel and mode selectors.

110mm

1
2
3

16

4

110

5
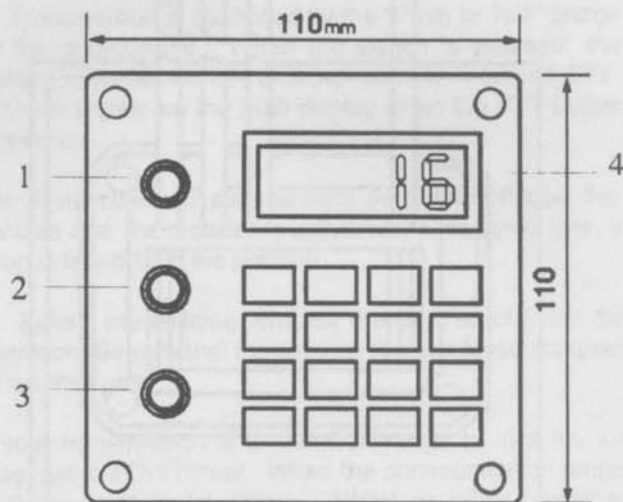
6. MICROPHONE JACK
   Allows a microphone plug to be connected

7. SPEAKER TERMINAL
   Connect external speaker (8 ohm, 8 watt)

8. POWER CORD
   Connect to battery

9. ANTENNA CONNECTOR
   Connect VHF/FM marine antenna

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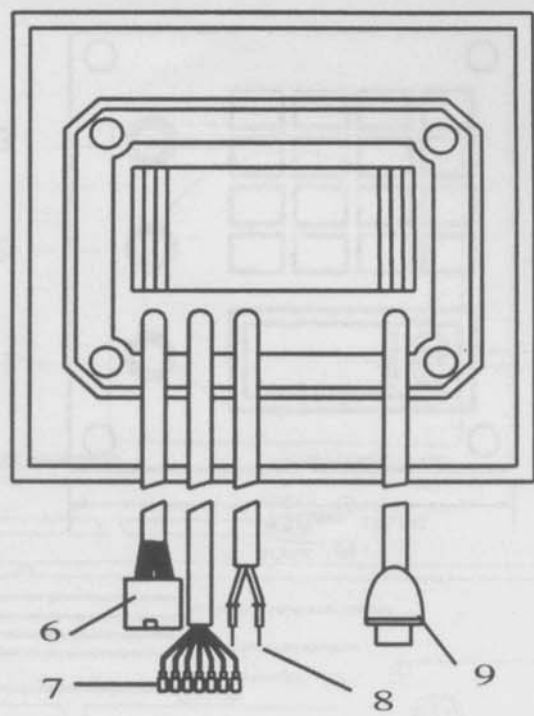
RECEIVING

1. Rotate the Volume control clockwise. When you hear a click, the power is on. Adjust the control to the desired listening level. If you do not hear any sound, set at mid-range and proceed to the next step

2. Turn the Squelch control completely counter clockwise. When sound comes from the speaker, adjust the Volume control to the desired listening level. Select an unused channel, then adjust the Squelch control clockwise until the background noise is just eliminated. This is called the threshold adjustment.

TRANSMITTING

1. Transmission is controlled by the "Push to Talk" button on the microphone. When the switch is pressed, the transmitter is turned ON and the receiver is turned OFF. "TX" will appear on the LCD display when the PTT button is pressed.

The Transmitter will automatically be turned off after five minutes and the receiver is activated. At the same time, a beep is heard from the speaker.

2. Before transmitting, choose the desired channel for operation. Be sure that the channel is clear & not occupied by another party.

If your transmission is to be short range or in a harbor area, set to LOW power. When the communication range is longer, set to HI power. HIGH or LOW power is indicated in the LCD display. Low power is 1 watt, High power is 25 watt.

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USING THE KEYPAD

The program keypad contains 16 touch-entry keys to perform all the channel and mode selections.

The Numeric Keys are used to select two digit channel numbers. Single digit channels must be prefixed with a zero.

EXAMPLE: Channel 68 would be selected by pressing '6' and then '8'. Channel 6 would be selected by pressing '0' then '6'.

16 KEY
Press to automatically select channel 16 from any other mode. Pressing again makes the unit return to last channel set before the key was pressed.

UP KEY
Pressing the "UP" key increases the channel number.

DOWN KEY
Pressing the "DOWN" key decreases the channel number.

INT'L KEY
The INT'L and USA mode are alternatively switched each time the key is pressed. INT'L is displayed in the LCD display.

HI/LO KEY
The transmit power is switched from "LO" to "HI" or "HI" to "LO" each time the key is pressed. The word "HI" or "LO" appears on the LCD display. "HI" power is 25 watts. "LO" power is 1 watt.

SCAN KEY
Pressing the scan key starts the all channel scanning operation. "SCAN" is displayed in the LCD display. The scanning speed is 3 channels per second and will stop at any active channel. To start scanning again while the unit is stopped on an active channel, keep pressing the

SCAN KEY continued
"SCAN" key for 0.5 seconds or more. When the active channel goes off, the scanning starts again. To stop the scanning mode, operate the keys as follows:

A) Pressing the "UP" or "DOWN" key stops the scanning operation at the last channel displayed.

B) Pressing the "16" key stops the scanning operation and selects the Channel 16.

MEMORY KEY
Use to add or delete channels from the scan memory. While performing the scan function this switch will toggle between All Channel Scan and Programmed Memory Scan. When the unit is in memory scanning operation, "M" appears on the LCD display.

WX KEY
Pressing this key during reception on any other channel selects the channel Wx 01. "WX" is displayed on the LCD display. Repeated pressing advances the channel to

Wx 02, Wx 03 - Wx10.

When selecting other channels, operate as follows:

A) Pressing the Up or Down key returns the unit to the last channel selected.

B) Press the "16" key - automatically selects channel 16.

DUAL WATCH KEY
Press to automatically select from any other mode except scan mode. The unit receives channel 16 continuously while operating on another channel in the absence of a signal on channel 16. When selecting another mode operate the keys as follows:

A) Press the "DW" key, returns the unit to the last channel selected before the "DW" mode was selected.

B) Press the "16" key - automatically selects channel 16.

MEMORY PROGRAMMING

Select the channel number you want to enter into the scan memory. Press the "MEM" key. This selected channel is now in memory. If you want to add additional channels to the memory scan, repeat the above operation.

The scan memory is available for all US and International channels with the exception of the weather channels. Also, it is not possible to scan US and International channels at the same time.

To activate the scan memory function on the unit, press the scan key after you have programmed the channels you wish to monitor. Use the "MEM" key to toggle between all channel and program memory scan.

MEMORY CANNEL DELETION

To remove a channel from memory, select the channel to be deleted and press the "MEM" key. After reactivating the scan memory function, you will notice the the channel deleted will not be part of the programmed scan.

In the event that no channels are programmed into the memory, the LCD display will show "CL" to indicate a clear program.

UNITED STATES VHF MARINE CHANNEL USAGE CHART

CHANNEL	TRAFFIC TYPE	RX (MHz)	TX (MHZ)	SHIP-SHIP	SHIP-SHORE
01	Port Operations	156.050	156.050	Yes	Yes
02	Port Operations	156.100	156.100	Yes	Yes
03	Port Operations	156.150	156.150	Yes	Yes
04	Port Operations	156.200	156.200	Yes	Yes
05	Port Operations	156.250	156.250	Yes	Yes
06	Safety Calling	156.300	156.300	Yes	No
07	Commercial	156.350	156.350	Yes	Yes
08	Commercial	156.400	156.400	Yes	Yes
09	Commercial & Non-Commercial	156.450	156.450	Yes	Yes
10	Commercial	156.500	156.500	Yes	Yes
11	Commercial	156.550	156.550	Yes	Yes
12	Port Operations	156.600	156.600	Yes	Yes
13	Navigation	156.650	156.650	Yes	Yes
14	Port Operations	156.700	156.700	Yes	Yes
15	Distress, Safety Calling	156.750	-	Rec Only	Rec Only
16	Safety Calling	156.800	156.800	Yes	Yes
17	State Control	156.850	156.850	Yes	Yes

CHANNEL	TRAFFIC TYPE	RX (MHz)	TX (MHZ)	SHIP-SHIP	SHIP-SHORE
18	Commercial	156.900	156.900	Yes	Yes
19	Commercial	156.950	156.950	Yes	Yes
20	Commercial	161.600	157.00	Yes	Yes
21	US Coast Guard	157.050	157.050	Yes	Yes
22	US Coast Guard	157.100	157.100	Yes	Yes
23	US Coast Guard	157.150	157.150	Yes	Yes
24	Public Correspondence	161.800	157.200	No	Yes
25	Public Correspondence	161.850	157.250	No	Yes
26	Public Correspondence	161.900	157.300	No	Yes
27	Public Correspondence	161.950	157.350	No	Yes
28	Public Correspondence	162.000	157.400	No	Yes
60	-	160.625	156.025		
61	-	160.675	156.075		
62	-	160.725	156.125		
63	-	160.775	156.175		
64	-	160.825	156.225		
65	Port Operations	156.275	156.275	Yes	Yes
66	Port Operations	156.325	156.325	Yes	Yes
67	Commercial	156.375	156.375	Yes	No
68	Non-Commercial	156.425	156.425	Yes	Yes

CHANNEL	TRAFFIC TYPE	RX (MHz)	TX (MHZ)	SHIP-SHIP	SHIP-SHORE
69	Non-Commercial	156.475	156.475	Yes	Yes
70	Digital Selective Calling	156.525	156.525		
71	Non-Commercial	156.575	156.575	Yes	Yes
72	Non-Commercial	156.625	156.625	Yes	No
73	Port Operations	156.675	156.675	Yes	Yes
74	Port Operations	156.725	156.725	Yes	Yes
77	Port Operations	156.875	156.875	Yes	No
78	Non-Commercial	156.925	156.925	Yes	Yes
79	Commercial	156.975	156.975	Yes	Yes
80	Commercial	157.025	157.025	Yes	Yes
81	US Coast Guard	157.075	157.075	Yes	Yes
82	US Coast Guard	157.125	157.125	Yes	Yes
83	Us Coast Guard	157.175	157.175	Yes	Yes
84	Public Correspondence	161.825	157.225	No	Yes
85	Public Correspondence	161.875	157.275	No	Yes
86	Public Correspondence	161.925	157.325	No	Yes
87	Public Correspondence	161.975	157.375	No	Yes
88	Commercial	157.425	157.425	Yes	No

INTERNATIONAL VHF MARINE CHANNEL USAGE CHART (SIMPLEX)

CHANNEL	TRAFFIC TYPE	RX (MHz)	TX (MHZ)	SHIP-SHIP	SHIP-SHORE
01	Port Operations	160.650	156.050	Yes	Yes
02	Port Operations	160.700	156.100	Yes	Yes
03	Port Operations	160.750	156.150	Yes	Yes
04	Port Operations	160.800	156.200	Yes	Yes
05	Port Operations	160.850	156.250	Yes	Yes
06	Safety Calling	156.300	156.300	Yes	No
07	Commercial	160.950	156.350	Yes	Yes
08	Commercial	156.400	156.400	Yes	Yes
09	Commercial & Non-Commercial	156.450	156.450	Yes	Yes
10	Commercial	156.500	156.500	Yes	Yes
11	Commercial	156.550	156.550	Yes	Yes
12	Port Operations	156.600	156.600	Yes	Yes
13	Navigation	156.650	156.650	Yes	Yes
14	Port Operations	156.700	156.700	Yes	Yes
15	Distress, Safety Calling	156.750	156.750	Rec Only	Rec Only
16	Safety Calling	156.800	156.800	Yes	Yes
17	State Control	156.850	156.850	Yes	Yes

CHANNEL	TRAFFIC TYPE	RX (MHz)	TX (MHZ)	SHIP-SHIP	SHIP-SHORE
18	Commercial	161.500	156.900	Yes	Yes
19	Commercial	161.550	156.950	Yes	Yes
20	Commercial	161.600	157.00	Yes	Yes
21	US Coast Guard	161.650	157.050	Yes	Yes
22	US Coast Guard	161.700	157.100	Yes	Yes
23	US Coast Guard	161.750	157.150	Yes	Yes
24	Public Correspondence	161.800	157.200	No	Yes
25	Public Correspondence	161.850	157.250	No	Yes
26	Public Correspondence	161.900	157.300	No	Yes
27	Public Correspondence	161.950	157.350	No	Yes
28	Public Correspondence	162.000	157.400	No	Yes
60	-	160.625	156.025		
61	-	160.675	156.075		
62	-	160.725	156.125		
63	-	160.775	156.175		
64	-	160.825	156.225		
65	Port Operations	160.875	156.275	Yes	Yes
66	Port Operations	160.925	156.325	Yes	Yes
67	Commercial	156.375	156.375	Yes	No
68	Non-Commercial	156.425	156.425	Yes	Yes

CHANNEL	TRAFFIC TYPE	RX (MHz)	TX (MHZ)	SHIP-SHIP	SHIP-SHORE
69	Non-Commercial	156.475	156.475	Yes	Yes
70	Digital Selective Calling	156.525	156.525		
71	Non-Commercial	156.575	156.575	Yes	Yes
72	Non-Commercial	156.625	156.625	Yes	No
73	Port Operations	156.675	156.675	Yes	Yes
74	Port Operations	156.725	156.725	Yes	Yes
77	Port Operations	156.875	156.875	Yes	No
78	Non-Commercial	156.925	156.925	Yes	Yes
79	Commercial	156.975	156.975	Yes	Yes
80	Commercial	157.025	157.025	Yes	Yes
81	US Coast Guard	157.075	157.075	Yes	Yes
82	US Coast Guard	161.725	157.125	Yes	Yes
83	Us Coast Guard	161.775	157.175	Yes	Yes
84	Public Correspondence	161.825	157.225	No	Yes
85	Public Correspondence	161.875	157.275	No	Yes
86	Public Correspondence	161.925	157.325	No	Yes
87	Public Correspondence	161.975	157.375	No	Yes
88	Commercial	162.025	157.425	Yes	No

VHF MARINE WEATHER CHANNEL USAGE CHART

CHANNEL	TRAFFIC TYPE	RX (MHz)
WXO	NOAA Weather	163.275
WX1	NOAA Weather	162.550
WX2	NOAA Weather	162.400
WX3	NOAA Weather	162.475
WX4	NOAA Weather	162.425
WX5	NOAA Weather	162.450
WX6	NOAA Weather	162.500
WX7	NOAA Weather	162.525
WX8	NOAA Weather (Canadian)	161.650
WX9	NOAA Weather (Canadian)	161.775
WX10	NOAA Weather	163.275

CONDITIONS OF WARRANTY

1 Brookes & Gatehouse Limited (B&G) warrants B&G Network products, in normal usage, to be free from defects in materials or workmanship for a maximum period of two years (12 months with respect to mechanical items) from original purchase by the owner, subject to the conditions and limitations below. Any part that proves to be defective, in normal usage, during that period will be repaired or replaced by Brookes & Gatehouse Ltd at Brookes & Gatehouse Ltd's option on presentation of the warranty certificate to an authorized dealer, distributor or Brookes & Gatehouse Ltd.

This warranty is subject to the following conditions and limitations.

A Brookes & Gatehouse Ltd's liability shall be limited to the repair or replacement of goods or parts defective in materials or workmanship.

B Determination or the suitability of the material for the use contemplated by the owner is the sole responsibility of the buyer, and Brookes & Gatehouse Ltd shall have no responsibility in connection with such suitability.

C Brookes & Gatehouse Ltd shall not be responsible for any harm resulting from:

1 Failures due to use of products in applications for which they are not intended.

2 Failures due to corrosion, wear and tear, or improper installation.

3 Malfunctioning of the product due to externally generated magnetic, electrical or acoustic interference.

D Brookes & Gatehouse Ltd shall not be responsible for boat slipping or lifting, freight shipping charges or installation labor associated with any warranty claims

WARRANTY continued
or for loss or damage in transit.

E Brookes & Gatehouse Ltd shall not be responsible for any charges relating to onboard servicing, sea trials, or any other work associated with the installation. The right is reserved for any such service to be charged at local rate.

F Service by anyone other than Authorized Brookes & Gatehouse Ltd Representatives shall void this warranty unless it accords with Brookes & Gatehouse Ltd's guidelines and standards of workmanship.

2 These are not warranties of merchantability, fitness for purpose of any kind, expressed or implied, and none shall be implied by law. The duration of any such warranties that are nonetheless implied by law for the benefit of the customer shall be limited to a period of two years from the original purchase by the owner. The warranty is not transferable.

3 Brookes & Gatehouse Ltd shall not be liable for consequential damages to vessels, equipment, or other property, or persons due to the failure of Brookes & Gatehouse Ltd equipment.

4 This warranty does not limit in any way your common law or statutory rights.