

# HIMUNICATION

## VHF Marine Radio

### TS18

### TS18S

## User Manual



Please Scan the QR Code to Download  
EN/FR/ES/ITA Multi-language User Manual



<http://www.himunication.com>

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# TS18/TS18S User Manual

## EU Regulatory Conformance

As certified by the qualified laboratory, the product is in compliance with the essential requirements and other relevant provisions of the Directive 2014/53/EU. Please note that the above information is applicable to EU countries only.

Manufacturer: HIMUNICATION

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## Warning - Limitations on Use

This TS18S product contains simple PPI chart, only as an aid to navigation for reference. Only Official Government Charts and Notice to Mariners contain all the current information needed for safe navigation. This products feature cannot be relied on as complete or accurate and may vary depending on location. It ' s the captain ' s responsibility to use official government charts, notices to mariners, caution, sound judgment and proper navigational skills when operating their boat using this product.

## Optional Accessories Handset/Wiring

### diagram Handset



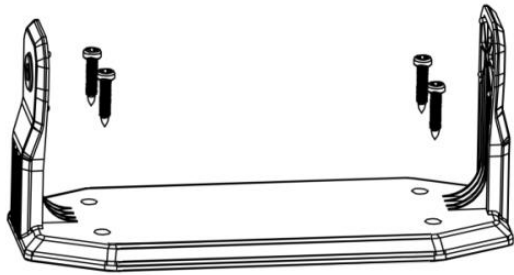
Handset 1



Handset 2

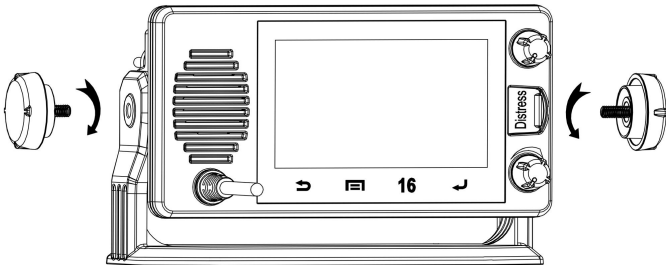
## 1. Installation

### Yoke Mount Installation:



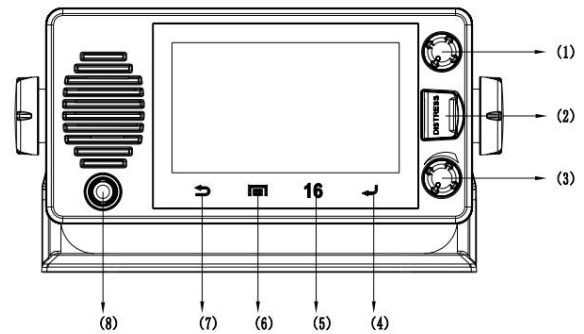
1. Place and fasten the mounting bracket on the console by 4 screws;
2. Mount the radio onto the bracket;
3. Attach the supplied mounting knobs from two sides of the bracket to fix the base radio securely in the mounting bracket (as shown above).

Note. Mounting bracket, mounting knobs and 4 screws M4x20 are in a radio's package.



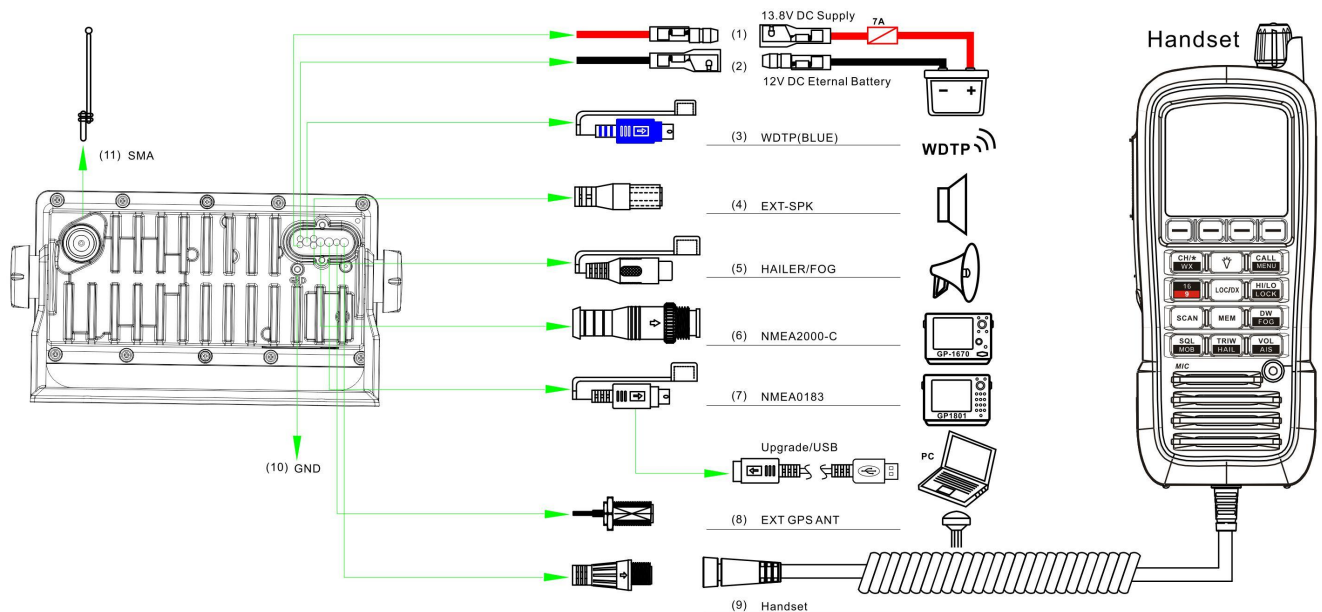
## 2. Front Panel/Back Panel

### Front Panel



1. SQL Knob—The SQL will becomes larger while Turning rotary knob by clockwise and vice versa.
2. DISTRESS key—Pull up key cover and press hold on to start Distress Alert Calling if you programmed your radio with an MMSI Number.
3. VOL Knob—When the radio is off, turn rotary knob by clockwise then radio power on and vice versa. Cotinue to rotate knob to get up/down function when radio is on.
4. Enter key—Any time,press this to enter.
5. 16 key—Any time,press this to channel 16.
6. Homepage key—Any time,press this to homepage.
7. Return key—Any time,press this to return to previous level.
8. Standard Handset PTT—remote command microphone push this key to sent out radio frequency signals.

## Back Panel



- 1、Power + wire (red, 210 mm length)
- 2、Power – wire (black, 210 mm length)
- 3、WDTP (BLUE)
- 4、External speaker cable with 3.5 mm plug (180 mm length)
- 5、Hailer/Fog cable with 3.5 mm plug (180 mm length)
- 6、NMEA 2000 cable with Micro-C connector (Male)
- 7、NMEA0183/update USB cable with PS2 connector (Male)
- 8、Extension GPS antenna cable with SMA connector (Female)
- 9、Optional handset port
- 10、GND hole (M3x5)
- 11、RF antenna port SO239 (Female)

As above show, the “number in picture” correspond to “wiring number” also correspond to “the number in the below table” The details please check the below table.

## Connection cables The details please check the below table

| Serial Number | General Description                                     | Function Description                 | Different Color Code of the cable wires |               |
|---------------|---------------------------------------------------------|--------------------------------------|-----------------------------------------|---------------|
| (1)           | Red & Black Power                                       | Power supply wires                   | Red                                     | Power+ +13.8V |
| (2)           |                                                         |                                      | Black                                   | Power- GND    |
| (3)           | WDTP (BLUE) connector                                   | WDTP (BLUE)                          | -                                       | -             |
| (4)           | Audio Connector Black 3.5 mm Plug                       | External Speaker                     | Red                                     | AUDIO-OUT     |
|               |                                                         |                                      | Black                                   | GND           |
|               |                                                         |                                      | -                                       | NC            |
| (5)           | Audio Connector RCA (Phone) Plug                        | Hailer/Fog                           | White                                   | SPK+          |
|               |                                                         |                                      | Black                                   | SPK-          |
| (6)           | NMEA 2000 connector Micro-C connector (Male)            | NMEA2000 network                     | -                                       | -             |
| (7)           | NMEA0183/update USB cable with PS2 connector (Male)     | NMEA0183 network Software upgrade    | Green                                   | USB-TX        |
|               |                                                         |                                      | Brown                                   | 0183_OUT      |
|               |                                                         |                                      | White                                   | NC            |
|               |                                                         |                                      | Orange                                  | 0183_IN       |
|               |                                                         |                                      | Red                                     | USB-RX        |
|               |                                                         |                                      | BARE WIRE                               | GND           |
|               |                                                         |                                      | Black                                   | GND           |
| (8)           | Extension GPS antenna cable with SMA connector (Female) | EXT GPS ANT                          | -                                       | -             |
| (9)           | Optional handset port                                   | Remote command microphone (Optional) | -                                       | -             |
| (10)          | GND connection hole                                     | Grounding ware                       | -                                       | -             |
| (11)          | RF antenna connector SO239 (Female)                     | VHF antenna                          | -                                       | -             |

### Accessories included

1.5m power cable - 7 A fuse

Cable NMEA0183 0.4 m

External Output Cable / Voice Holder

### Optional accessory

A Plug & Play GPS antenna can be connected directly to the VHF.

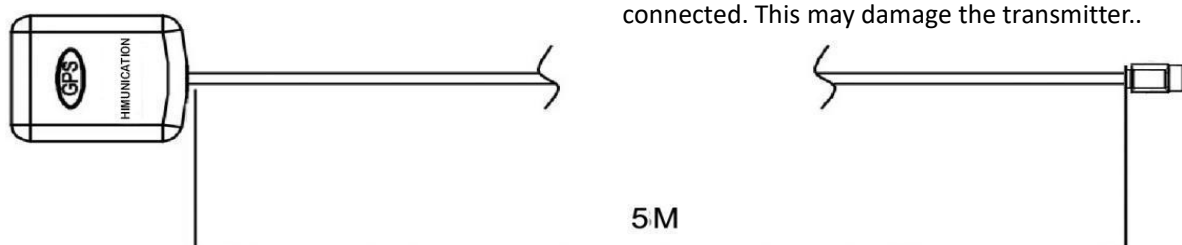
### More information:

1. VHF have the over voltage protection and there is a prompt tone when the radios over the voltage.

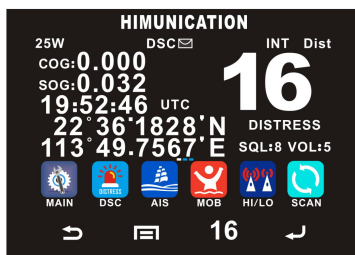
2. Connect the radio wiring

All wiring on the radio should be done with the vessel power supply turned off. While radio power is polarity protected, the fuse will blow if connection is made wrong way round. Ensure any unused bare wires are isolated from each other, to prevent the potential of a short circuit.

Warning: never operate the radio without the antenna connected. This may damage the transmitter..



### 3. LCD Display



Homepage 1



Homepage 2



Homepage 3

There are three homepages, you can swipe left or right to switch homepages.

The bottom row is the shortcut. If you want to relocate the icon, hold on the icon and drag it to the blank area to release it.

### 4. Function key



Any time, press this to return to previous step.



Any time, press this to homepage.



Any time, press this to channel 16.



Any time, press this to enter.

### 5. ICON Function



**GPS**

Click the "GPS" icon to check current position when connecting antenna.



**HI/LO**

Click the "HI/LO" to toggle the TX power from Hi to Lo and vice versa. The corresponding "25W/1W" icon will be displayed on the LCD.

Some of the channels (such as channel 16 initially set for high power channel 13&67 initially set for low power) have been initially set to be low power or high power, but can be reprogrammed manually to high power or low power.

### BT(Optional)



Click the "BT" icon to enter the Bluetooth mode, there are three choices: WPTT, HEADSET and MOBILE.

#### WPTT

Choose the "WPTT", "\*" and "connected" will be displayed on the LCD when connected.

#### HEADSET

Choose the "HEADSET", then power on your own Bluetooth headset, click the match key to enter into the match mode, there would be "connected" displayed on the LCD. Please Note: WPTT and HEADSET could connect to VHF in the meantime.

#### MOBILE

Choose the "MOBILE", turn on the Bluetooth of the mobile, search for the device name you would like, click it, there would be "connected" displayed on the LCD when connected.

When giving a call, there is  displayed, click it if you want to hangup.

When getting a call, there are  and , click  if you want to hangup, click  if you want to answer.

#### CHAN



Click the "CHAN" icon to select channel, you can click slide to left or click "◀" page up, slide to right, or click "▶" to page down. Select the desired channel and return to normal mode.



## SCAN



Click the "SCAN" icon to enter scan interface.



Click "Start" to activate the scan function which is searching for currently all working channels. All scanning: CH1-CH2-CH3-...-CH88. Memory scanning: M1 – M2 – M3 - ...M10 – M1- ...

When a signal is detected, the scan pauses until the signal disappears.

If you want to stop, click "Stop".

## PSCAN



Click the "PSCAN" icon to enter Pscan interface.

Click "Start" to activate the Priority Scan.

Priority memory scanning: M1 – CH 16 – M2 – CH 16 - ... CH 16 – M1...

Priority all scanning: CH1-CH16-CH2-CH16-CH3-CH16-...CH88-CH16-L1-CH16-

## DUAL



At the normal mode, Click the "DUAL" icon to enter dual interface.

Click "Start" to activate the DUAL WATCH mode. Monitor the current channel and CH16 in cycle. Whenever weather alert is activated, the WX Alert channel will be monitored once every 4 seconds.

## TRIW



Click the "TRIW" icon to enter triw interface.

Click "Start" to activate the TRI WATCH mode. Monitor CH16, current channel and one programmed channels in cycle.

## MOB



Click the "MOB" icon, "MOB" icon will be shown on LCD,

then Press Distress for 3 seconds, Distress call with nature MOB is sent.

MOB mark is outputted via NMEA. A MOB mark is immediately sent to the chart plotter to have a position as accurate as possible.

## HAIL



Click the "HAIL" icon to enter "HAILER LISTEN MODE" for setup as you wish. Sounds received through the horn can be heard through the radio speaker. Press and hold the PTT key and speak your announcement. Release the PTT key to listen.

## FOG



Click the "FOG" and enter "Foghorn Menu", then select preferred item from list. Press PTT key on the microphone or handset to sound the horn. The horn will stop when you release the PTT key in Manual Mode .

## MEM



Enter /Exit the memory mode:

Click the "MEM" icon to enter the memory mode, the memory channel will be marked and "M" icon show on the right side next to channel number. At the left side of the current channel will mark a "MEM" icon which means already entered the user memory mode.

At the Memory mode, short press the MEM key to exit the memory mode. The "M" icon and "MEM" icon will disappear.

## SAVE



**Adding/Deleting memory CH:**

1. At the normal mode, select desired channel for programming.
2. Click the "SAVE" icon to store up the channel as memory channel.
3. "M" icon will be shown on LCD to indicate the current CH has been saved in the memory.
4. No limitation for saving memory channels.
5. For USA, International, and Canadian Frequency can be saved separately.
6. At the normal mode, select the memory channel to be deleted.

7. Click the "SAVE" icon to delete the selected channel from the memory mode.



Click the "DX/LOC" to get conversion between local and distance mode (DX allows normal receive sensitivity; and "LOCAL" eliminates receiver noise, but degrades receiver sensitivity meanwhile "LOCAL" icon display on LCD).



At the normal mode, Click the "16" to jump to priority CH16 at High Power if the current channel is not the priority channel.

After the channel is tuned to priority CH16, "P" icon is lit to indicate the priority CH16 has been reached. Slide the channel to left or right to return to normal mode.



At the normal mode, Click the "CH09" to jump to second priority channel(Default CH09) at High Power if the current channel is not the priority channel.

After the channel is tuned to second priority channel, "P2nd" icon is lit to indicate the second priority channel has been reached. Slide the channel to left or right to return to normal mode.

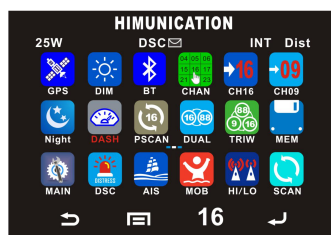


Click the "P2nd", all channels will be display on the screen, you can click slide to left or click "◀" page up, slide to right, or click "▶" to page down. Select the desired channel as second priority channel, and return to normal mode.

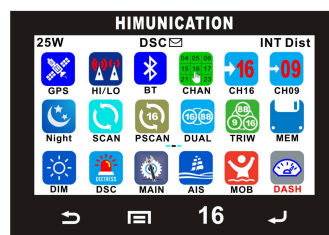


day mode.

Click the "NIGHT" icon to switch between night mode and



Night mode

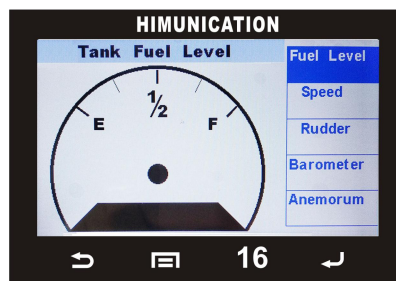


Day mode



Click the "DASH" icon to enter dash board. You can see the instrument panels.

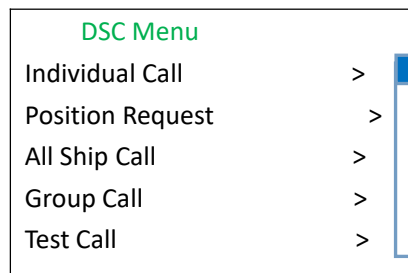
Connect the N2K line. If there is data input from N2K interface line, you can click the icon to display the panel.



DSC

Click the "DSC", the DSC Menu will be displayed as below on

LCD:



Detailed entrance for each catalogue as shown below:

|                   |                  |                   |                                                                                                   |
|-------------------|------------------|-------------------|---------------------------------------------------------------------------------------------------|
| Individual Call▶  | Individual Call  | Receive Call Log▶ | Receive Call Log                                                                                  |
|                   | Input Address    |                   |  Distress Call |
|                   | From Phone book  |                   |  Others Call   |
|                   |                  |                   |                                                                                                   |
| Position Request▶ | Position Request | Send Call Log▶    | Send Call Log                                                                                     |
|                   | Input Address    |                   |  Distress Call |
|                   | From Phone book  |                   |  MOB Call      |
|                   |                  |                   |  Others Call   |
|                   |                  |                   |                                                                                                   |
| All Ship Call▶    | All Ship Call    | Phone Book▶       | Phone Book                                                                                        |
|                   | Safety           |                   | Buddy List                                                                                        |
|                   | Urgency          |                   | Group List                                                                                        |
|                   |                  |                   |                                                                                                   |
| Group Call▶       | Group Call       | DSC Setup▶        | DSC Setup                                                                                         |
|                   | Input Address    |                   | Position Input                                                                                    |
|                   | From Phone book  |                   | Position Reply                                                                                    |
|                   |                  |                   | Test Ack                                                                                          |
|                   |                  |                   |                                                                                                   |
| Test Call▶        | Test Call        | My MMSI ID▶       | My MMSI ID                                                                                        |
|                   | Input Address    |                   | 100000008                                                                                         |
|                   | From Phone book  |                   |                                                                                                   |
|                   |                  |                   |                                                                                                   |

## MY MMSI ID setup

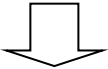
Firstly, press MAIN icon to enter “Main Menu”.

Secondly, click to select “DSC Operation” to enter “MY MMSI ID”.

Then you can set up your related MMSI ID as below, generally you need to double confirm the MMSI ID. Once confirmed, your MMSI ID will be locked by this radio.

|           |         |
|-----------|---------|
| My        | MMSI ID |
| 123456789 |         |

When input 9 digits, click the number on the soft keyboard for choosing the number from 0 to 9. You need to input all numbers from the left to right one by one until all finished. Once fulfilled 9 digits, then press “ENTER” to confirm.

|                                                                                                                               |   |   |
|-------------------------------------------------------------------------------------------------------------------------------|---|---|
| My MMSI ID<br>Input MMSI<br>123-----<br> | 0 | 1 |
|                                                                                                                               | 2 | 3 |
|                                                                                                                               | 4 | 5 |
|                                                                                                                               | 6 | 7 |
|                                                                                                                               | 8 | 9 |

|            |   |   |
|------------|---|---|
| My MMSI ID | 0 | 1 |
| 123456789  | 2 | 3 |
|            | 4 | 5 |
|            | 6 | 7 |
|            | 8 | 9 |

Note.  
enter  
MMSI  
can

DSC functions. This is a once-only operation.

You must  
your user  
before you  
access the

## Individual Call/Position

### Request/Group Call/Test call

Click the DSC icon and choose “Individual Call”, then choose “Input Address” or “From Phonebook”.

Take individual call as example-

First select the “Input Address”, then input 9 MMSI digits manually such as 123456789 for your address as below:

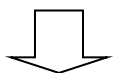
|                                                                                                                                                                                                                      |   |   |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|---|
| Input Address<br>Input 9 digits<br><br>0-----<br>  | 0 | 1 |
|                                                                                                                                                                                                                      | 2 | 3 |
|                                                                                                                                                                                                                      | 4 | 5 |
|                                                                                                                                                                                                                      | 6 | 7 |
|                                                                                                                                                                                                                      | 8 | 9 |

Then select the type of individual call such as Routine

|                            |
|----------------------------|
| Individual Call<br>Routine |
|----------------------------|

Next select the preferred channel such as 01 port operation and confirm to call

|                                                                                                                                                                                             |    |    |     |     |     |    |     |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|----|-----|-----|-----|----|-----|
| Individual Call  1/2  |    |    |     |     |     |    |     |
| Select Channel:                                                                                                                                                                             |    |    |     |     |     |    |     |
| 04A                                                                                                                                                                                         | 08 | 12 | 16  | 21A | 64A | 68 | 73  |
| 05A                                                                                                                                                                                         | 09 | 13 | 17  | 22A | 65A | 69 | 74  |
| 06                                                                                                                                                                                          | 10 | 14 | 18A | 61A | 66A | 71 | 77  |
| 07A                                                                                                                                                                                         | 10 | 15 | 19A | 62  | 67  | 72 | 78A |



|                                                                           |
|---------------------------------------------------------------------------|
| Individual Call<br>To: 100000000<br>Routine<br>Telephony by<br>Channel 16 |
|---------------------------------------------------------------------------|

Then the individual call is sent as below shown

|          |        |
|----------|--------|
| DSC      | USA    |
| SQL:5    |        |
| VOL:4    |        |
| 16       |        |
| DISTRESS |        |
| Elapsed  | 00: 56 |

### All Ship Call

Select the All Ship item

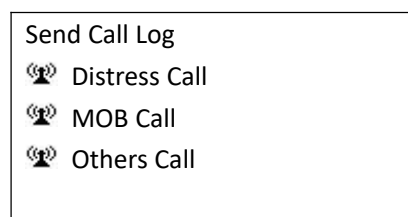
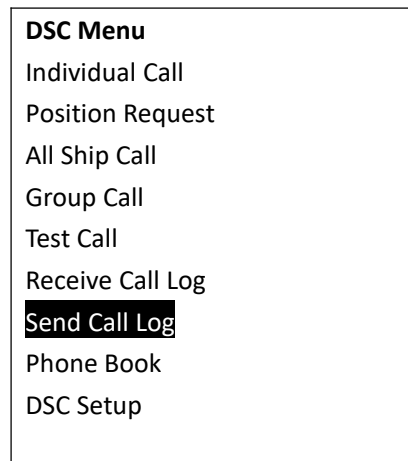
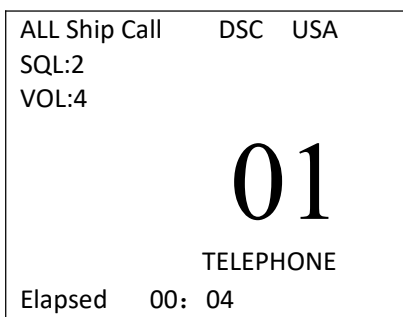
|                  |         |
|------------------|---------|
| DSC              | Menu    |
| Individual Call  |         |
| Position         | Request |
| All Ship Call    |         |
| Group            | Call    |
| Test             | Call    |
| Receive Call Log |         |
| Send Call log    |         |
| Phone Book       |         |
| DSC              | Setup   |
| My MMSI ID       |         |

The All Ship Call is sent

|                                    |
|------------------------------------|
| All Ship Call<br>Safety<br>Urgency |
|------------------------------------|

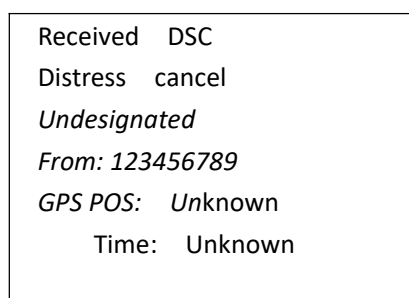
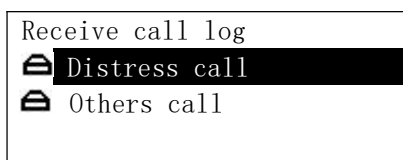
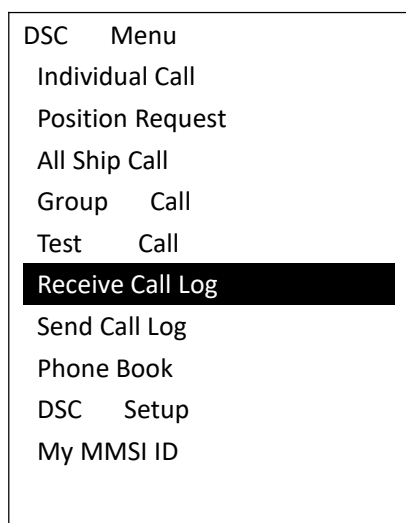
|                 |
|-----------------|
| Safety          |
| Select Channel: |
| 01 telephone    |
| 02 telephone    |
| 03 telephone    |
| 04 port ops     |
| 05 port ops/vts |
| 06 safety       |
| 07 port ops     |
| 08 commercial   |

|                                                                        |
|------------------------------------------------------------------------|
| All Ship Call<br>To : All Ship<br>Safety<br>Telephone by<br>Channel 01 |
|------------------------------------------------------------------------|



## Receive Call Log

When received DSC, you can check those messages from the “Distress Menu” and see the exact message.

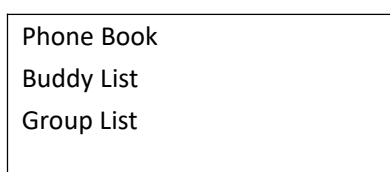
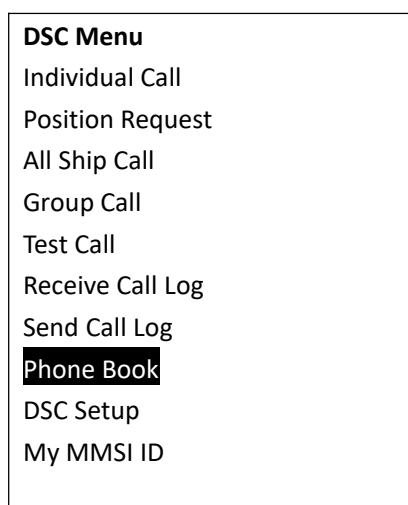


## Send Call Log

Press “DSC” icon to choose “Send Call Log” item and see previous distress call, MOB call and other call that you have sent.

## Phone Book

Press “DSC” icon to choose “Phone Book” item and can check the contacted ship by “Buddy List” and “Group List”



## DSC Setup

**DSC Menu**  
 Individual Call  
 Position Request  
 All Ship Call  
 Group Call  
 Test Call  
 Receive Call Log  
 Send Call Log  
 Phone Book  
**DSC Setup**  
 My MMSI ID

DSC Setup  
 Position Input  
 Position Reply  
 Test   ACK



## MAIN

Click the “MAIN” icon will display as below,  
slide up or down to see more menus:

**Main Menu**  
 VHF Operation  
 GPS Setup  
 AIS Setup  
 ATIS Operation  
 DSC Operation  
 System config

VHF Operation  
**Channel Band Set**  
 Priority 2nd Ch

Channel Band Set  
 USA  
**VINT**  
 CAN

## Detailed entrance for each

catalogue as shown below:

|                  |                  |  |                |                 |
|------------------|------------------|--|----------------|-----------------|
| VHF<br>Operation | Channel Band Set |  | ATIS Operation | My ATIS ID      |
|                  | Priority 2nd Ch  |  |                | ATIS Function   |
| GPS Setup        | GPS Source       |  | DSC Operation  | My MMSI ID      |
|                  | GPS Setting      |  |                | DSC Function    |
|                  | NMEA0183 Setting |  |                |                 |
|                  | GPS ALARM        |  |                |                 |
| AIS Setup        | AIS Output       |  | System Config  | Back Light lumi |
|                  | AIS Display Set  |  |                | Key Beep        |
|                  | AIS ALARM        |  |                | Version Info    |
|                  |                  |  |                | Factory Reset   |
|                  |                  |  |                | Language Select |

For priority 2<sup>nd</sup> Ch, you can select your preferred channel  
from below as your priority second channel.

Priority 2nd Ch  
 Select Channel:  
 01   telephony  
 04   sar  
 05   port ops/ vts  
 06   inter ship  
**07   commercial**  
 08   commercial

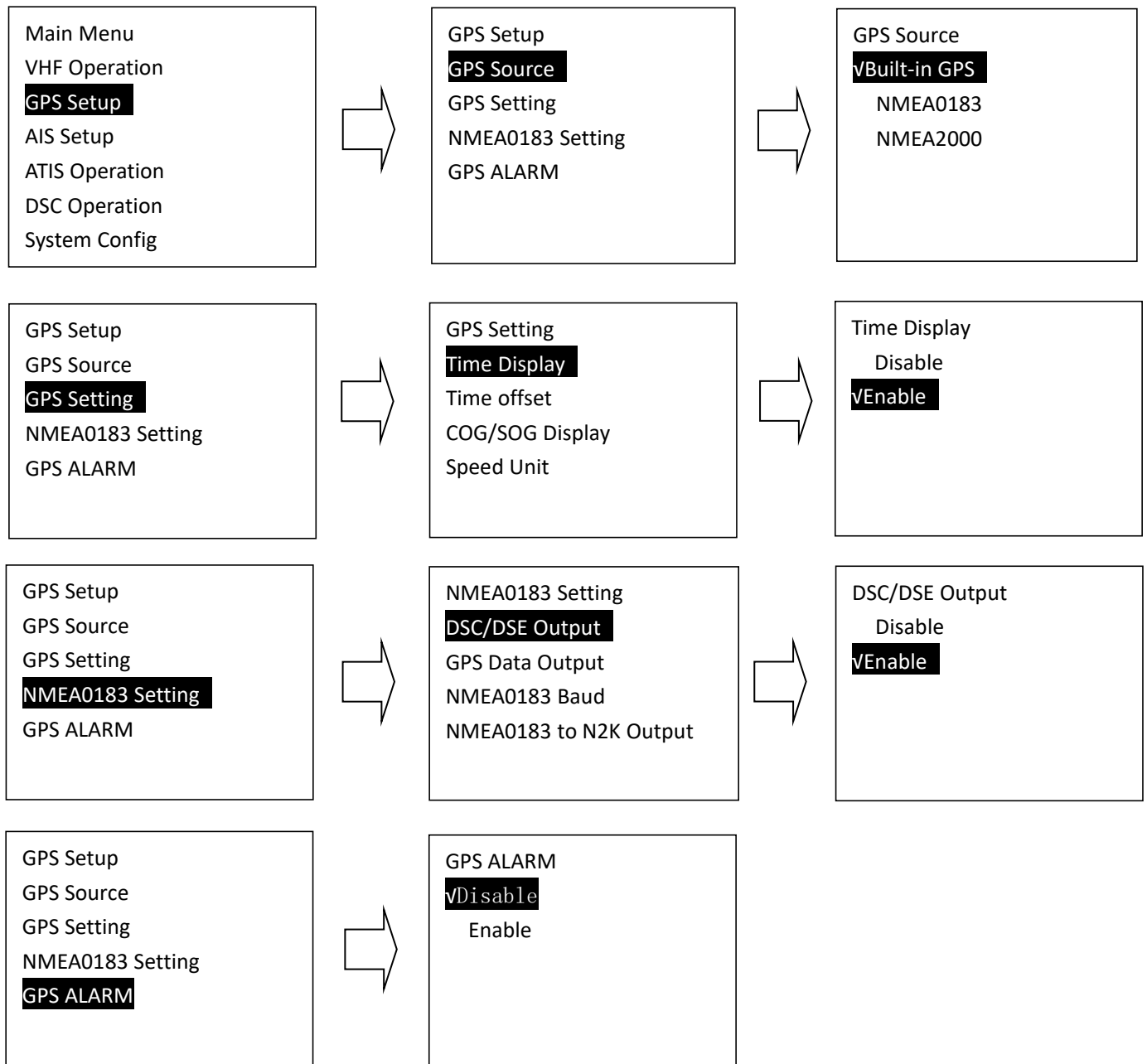
## VHF Operation

Click the “VHF Operation” to enter “VHF  
Operation” item as below

**Main Menu**  
**VHF Operation**  
 GPS Setup  
 AIS Setup  
 ATIS Operation  
 DSC Operation  
 System Config

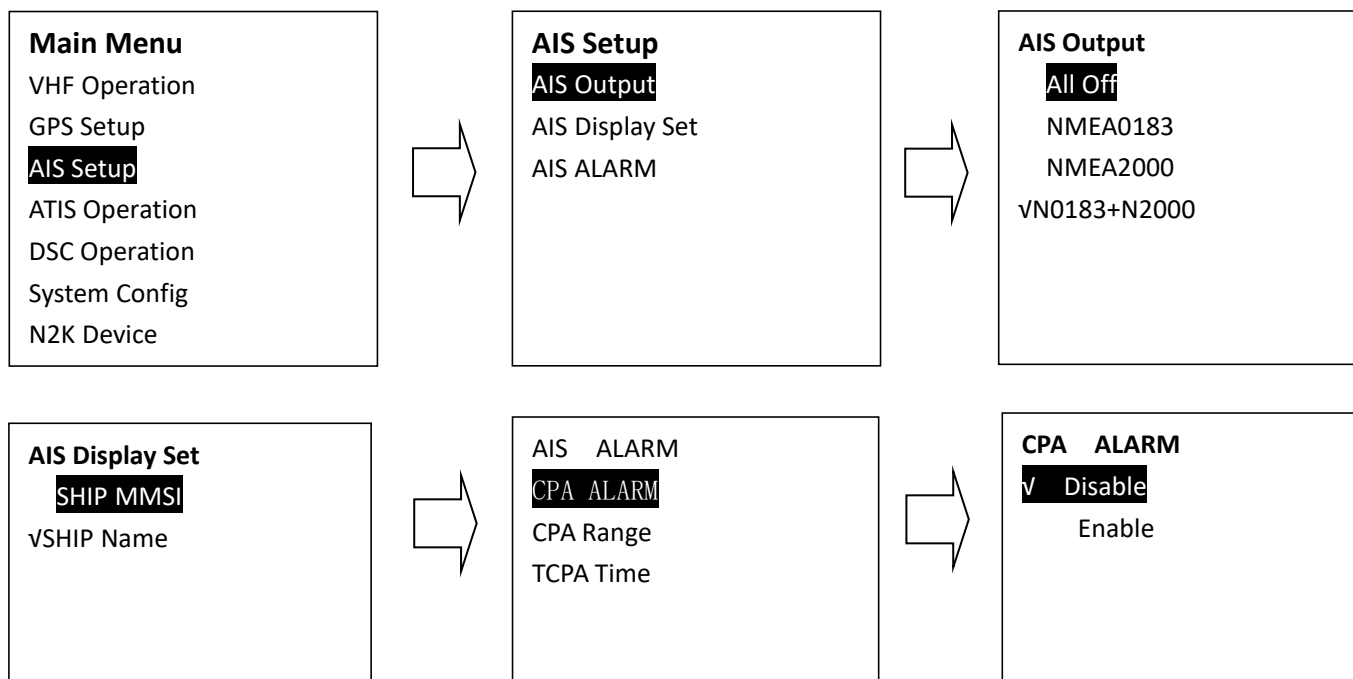
## GPS Setup

Click the “GPS Setup” to enter “GPS Setup” item for setup as below shown.



## AIS Setup (Only TS18S)

press the "MENU" icon to enter "AIS Setup" item for setup as below shown



CPA Alarm enable Choose "Disable" or "Enable" item to enter disable or enable AIS alarm, then press "ENTER" key to confirm.

**CPA Range**  
Input Range  
03.0NM

### CPA Range (Closest point of

#### approach) Alarm distance setup

Press UP/DOWN key to input digital one by one, after you have done this, press "ENTER" key to confirm, the maximum input range is 25.0NM, if the input value over than 25.0NM, than this operation is invalid, the system will ask for re-enter, the default CPA value is 3.0NM.

**TCPA Time**  
Input Time  
10:00Min

### TCPA (Time closest point of

#### approach)Alarm distance setup

Press UP/DOWN key to input digital one by one, after you have done this, press "ENTER" key to confirm, the maximum input range is 30 minutes, if the input value is over than 30 minutes, the input is invalid, then the system will ask for re-enter, the default CPA value is 10:00 Min.

### ATIS Operation

Click the "ATIS Operation" to enter "ATIS Operation"

**Main Menu**  
VHF Operation  
GPS Setup  
AIS Output  
ATIS Operation  
DSC Operation  
System Config  
N2K Device

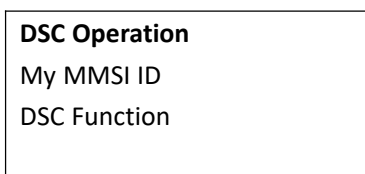
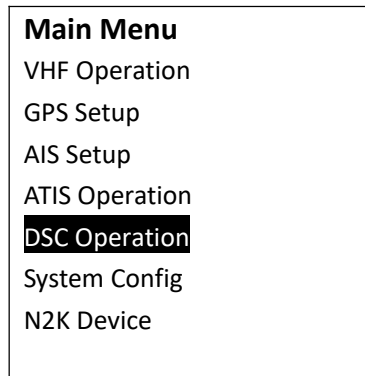
**ATIS Operation**  
My ATIS ID  
ATIS Function



Choose to press for setup or more function as you wish.  
Note. You must enter your user ATIS ID before you can access the ATIS functions. This is a once-only operation.

## DSC Operation

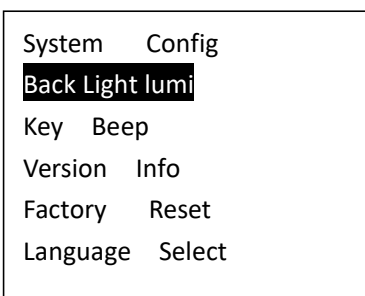
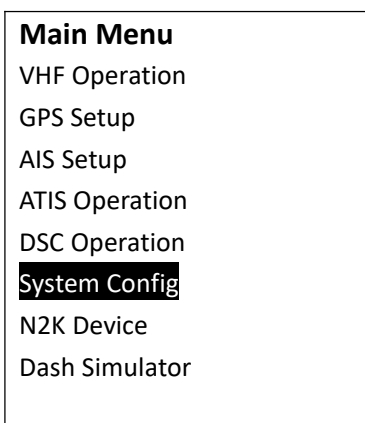
Click the “DSC Operation” to enter “DSC Operation”



(My MMSI ID setup have been explained in previous chapter, please see Page 10)

## System Config

Click the “System Config” to enter “system config”



## N2K Device

Display the list of device connected in NMEA2000.

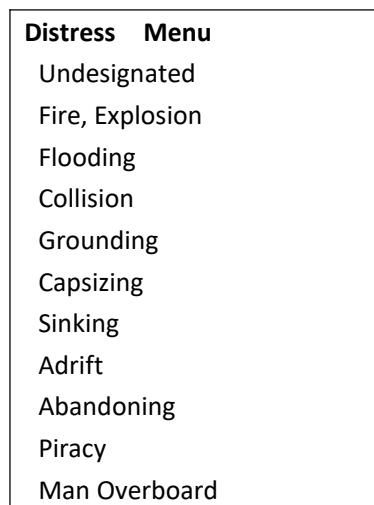
## Dash simulator

Demonstrate the dashboard.

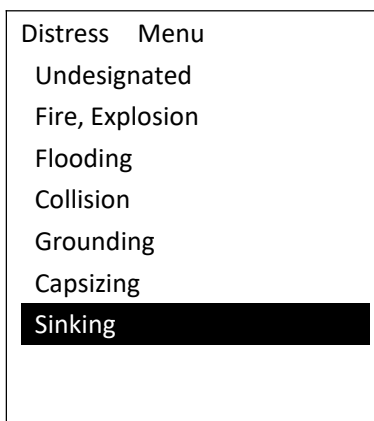
## Distress Menu & Send the Distress

### Message

Pull the DISTRESS red cover and press the DISTRESS key.  
Then below “Distress Menu” will be displayed on LCD.



Choose one distress item such as “sinking”, press and hold this for more than 3 seconds for transmitting sinking message out.



You can also choose to resend, pause or exit after this message was sent.

## AIS Operation(Only TS18S)



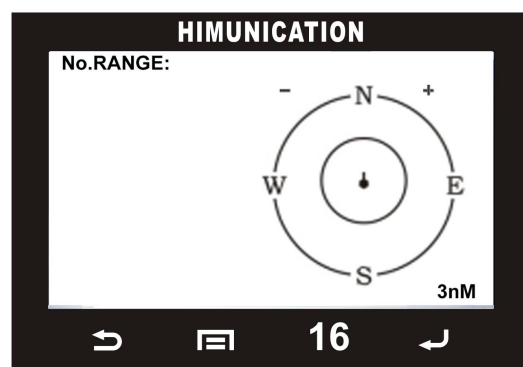
Click the "AIS" icon to enter this interface.

Ship Info menu  
**Ship info List**  
 Ship plotter  
 AIS Alarm list

From the AIS ship info menu, you have three options: List mode, plotter mode, AIS Alarm list alarm list mode. If you choose option 'AIS ship info list' and press 'enter', you will open the list mode.

| NO. | 01/05     | MMIS | Bearing | distance |
|-----|-----------|------|---------|----------|
| 01  | 413903183 | 257° | 0.79NM  |          |
| 02  | 413997668 | 256° | 0.80NM  |          |
| 03  | 413401340 | 259° | 1.25NM  |          |
| 04  | 413454520 | 239° | 1.28NM  |          |
| 05  | 000000000 | 277° | 1.49NM  |          |

If you choose option 'All ship plotter' and press 'enter', you will open the plotter mode.



when the CPA ALARM is turned on, If you choose option 'AIS Alarm List' and press enter, you will open the AIS alarm list mode.

| NO. | MMIS      | 01/04       |
|-----|-----------|-------------|
| 01  | 413903183 | 233° 0.96nM |
| 02  | 000000000 | 237° 5.54nM |
| 03  | 000000000 | 265° 1.13nM |
| 04  | 413401340 | 277° 1.48nM |

From either mode, you can choose a target with Confirm key, then press enter to display the target details.

MMIS :413903183  
 IMO NO:-----  
 Call Sign:  
 NAME:YUE HEYUAN  
 Lat:22°35.733'N  
 Lon:113°48.922'E  
 Bearing:232°  
 Dist:0.96nM  
 SOG:0.0KIS  
 COG:225.4°  
 Rot:-----

## BAND



Click the "BAND" icon to select band. Click the band you

want, click  to ensure.



## LANGUAGE



Click the "LANGUAGE" icon to select language, you can select the language you prefer.

## DIMMER SETTING



Use the button "DIM" to enter the dimmer setting page.

## Return

At Homepage1, You can see GPS information if received,

channel, SQL, VOL, HI/LO power. You can click



key

to return to homepage.



## 6. Other Features and Solutions

### Special function keys

If you press and hold the "DISTRESS" Key then power on, you can enter the up grade mode directly. LCD display as below:

The software's  
Upgrading by PC  
Please wait----

If you press and hold the "PTT" Key then power on, later you can enter the writing channel mode directly. LCD display as below:

The Private  
Channels are  
Cloning by PC  
Please wait---

### TX Time Out

The transmission will be automatically turned off after PTT key pressed over 5 consecutive minutes. The TX mode will be terminated and back to Rx mode. Once the PTT key is released, the TX time out timer will be reset. PTT key will back to work normally.

## The Local Time & Date on Screen:

When TS18 cannot receive the GPS signal to display the current position, screen will automatic display the time and date. When radio received the GPS signal, screen will show the current GPS location, related UTC time and date will be shown below the GPS location mark.

Click "MAIN" and enter "GPS Setup" to select the "Time offset" item for setting user's local time based on UTC time. Then press "Enter" to confirm. User need to pass the entire item from hour-minute-second then able to see enter option to click and confirm.

In other words, the process is the same as your setup of local time on your computer.

## NMEA 0183 and NMEA 2000

The TS18S can be connected to both NMEA0183 and NMEA2000 networks. When you connect your radio to a NMEA0183 network or a NMEA2000 network, the following data can be transferred; the radio can receive GPS position. GPS position can be displayed on the screen and is transmitted with DSC calls. When GPS data is not present, the radio will signal for you to enter your position manually every four hours.

This setting indicates whether you are connected to a NMEA0183 or NMEA2000 network; the radio can communicate over two networks at the same time.

## Compass safe distance is 0.8m

## Appendix A – List of Abbreviations

|     |                               |
|-----|-------------------------------|
| AE  | Auxiliary Equipment           |
| CE  | Conducted Emissions           |
| EMC | Electromagnetic Compatibility |
| EN  | European Norm                 |
| EUT | Equipment Under Test          |
| FTB | Fast Transient Burst          |
| MED | Marine Equipment Directive    |
| QP  | Quasi Peak                    |

## TS18/TS18S COMMUNICATION PGN

### TS18S SEND NMEA2000 PGN:

|        |                                                               |
|--------|---------------------------------------------------------------|
| 59392  | ISO acknowledgement                                           |
| 60928  | ISO Address Claim                                             |
| 126208 | Nmea request/command/acknowledge Group function               |
| 126464 | PGN List                                                      |
| 126720 | fast data packet, multi_frame, proprietary PGN                |
| 126996 | Product information                                           |
| 129799 | Radio frequency/Mode/power                                    |
| 129025 | Position,rapid update                                         |
| 129026 | COG/SOG Rapid update                                          |
| 129033 | time & date update                                            |
| 129038 | Class A position report (Rx,Tx) note:ais msg 1/2/3            |
| 129039 | Class B position report (Rx,Tx) note:ais msg 18               |
| 129040 | Class B ext_position report (Rx,Tx) note:ais msg 19           |
| 129793 | UTC and date report (Tx) note:ais msg 4/11                    |
| 129794 | Class A static and voyage related data (Rx,Tx) note:ais msg 5 |
| 129801 | Addressed safety msg (Rx,Tx) note:ais msg 12                  |
| 129802 | Broadcast safety msg (Rx,Tx) note:ais msg 14                  |
| 129808 | Dsc call information                                          |
| 129809 | AIS Class B 'CS'Static Data Report, Part A note:ais msg 24A   |
| 129810 | AIS Class B 'CS'Static Data Report, Part B note:ais msg 24B   |

### TS18 SEND NMEA2000 PGN:

|        |                                                 |
|--------|-------------------------------------------------|
| 59392  | ISO acknowledgement                             |
| 60928  | ISO Address Claim                               |
| 126208 | Nmea request/command/acknowledge Group function |
| 126464 | PGN List                                        |
| 126720 | fast data packet,multi_frame, proprietary PGN   |
| 126996 | Product information                             |
| 129025 | Position,rapid update                           |
| 129026 | COG/SOG Rapid update                            |
| 129033 | time & date update                              |
| 129799 | Radio frequency/Mode/power                      |
| 129808 | Dsc call information                            |

### TS18 AND TS18S RECEIVE NMEA2000 PGN:

|        |                                                 |
|--------|-------------------------------------------------|
| 59392  | ISO acknowledgement                             |
| 59904  | ISO request                                     |
| 60928  | ISO Address Claim                               |
| 126208 | Nmea request/command/acknowledge Group function |
| 126464 | PGN List                                        |
| 129026 | COG/SOG Rapid update                            |
| 129029 | GNSS Position data                              |

| International Marine VHF Channels & Frequencies |         |         |         |                                                          |
|-------------------------------------------------|---------|---------|---------|----------------------------------------------------------|
| CH                                              | TX Freq | RX Freq | Simplex | Freq Use                                                 |
| 1                                               | 156.050 | 160.650 |         | Public Correspondence, Port Operations and Ship Movement |
| 2                                               | 156.100 | 160.700 |         | Public Correspondence, Port Operations and Ship Movement |
| 3                                               | 156.150 | 160.750 |         | Public Correspondence, Port Operations and Ship Movement |
| 4                                               | 156.200 | 160.800 |         | Public Correspondence, Port Operations and Ship Movement |
| 5                                               | 156.250 | 160.850 |         | Public Correspondence, Port Operations and Ship Movement |
| 6                                               | 156.300 | 156.300 | x       | Inter-ship [1]                                           |
| 7                                               | 156.350 | 160.950 |         | Public Correspondence, Port Operations and Ship Movement |
| 8                                               | 156.400 | 156.400 | x       | Inter-ship                                               |
| 9                                               | 156.450 | 156.450 | x       | Inter-ship, Port Operations and Ship Movement            |
| 10                                              | 156.500 | 156.500 | x       | Inter-ship, Port Operations and Ship Movement [2]        |
| 11                                              | 156.550 | 156.550 | x       | Port Operations and Ship Movement                        |
| 12                                              | 156.600 | 156.600 | x       | Port Operations and Ship Movement                        |
| 13                                              | 156.650 | 156.650 | x       | Inter-ship Safety, Port Operations and Ship Movement [3] |
| 14                                              | 156.700 | 156.700 | x       | Port Operations and Ship Movement                        |
| 15                                              | 156.750 | 156.750 | x       | Inter-ship and On-board Communications at 1W only [4]    |
| 16                                              | 156.800 | 156.800 | x       | Distress, Safety and Calling                             |
| 17                                              | 156.850 | 156.850 | x       | Inter-ship and On-board Communications at 1W only [4]    |
| 18                                              | 156.900 | 161.500 |         | Public Correspondence, Port Operations and Ship Movement |
| 19                                              | 156.950 | 161.550 |         | Public Correspondence, Port Operations and Ship Movement |
| 1019                                            | 156.950 | 156.950 |         | Public Correspondence, Port Operations and Ship Movement |
| 2019                                            | 161.550 | 161.550 |         | Public Correspondence, Port Operations and Ship Movement |
| 20                                              | 157.000 | 161.600 |         | Public Correspondence, Port Operations and Ship Movement |
| 1020                                            | 157.000 | 157.000 |         | Public Correspondence, Port Operations and Ship Movement |
| 2020                                            | 161.600 | 161.600 |         | Public Correspondence, Port Operations and Ship Movement |
| 21                                              | 157.050 | 161.650 |         | Public Correspondence, Port Operations and Ship Movement |
| 22                                              | 157.100 | 161.700 |         | Public Correspondence, Port Operations and Ship Movement |
| 23                                              | 157.150 | 161.750 |         | Public Correspondence, Port Operations and Ship Movement |
| 24                                              | 157.200 | 161.800 |         | Public Correspondence, Port Operations and Ship Movement |
| 25                                              | 157.250 | 161.850 |         | Public Correspondence, Port Operations and Ship Movement |
| 26                                              | 157.300 | 161.900 |         | Public Correspondence, Port Operations and Ship Movement |
| 27                                              | 157.350 | 161.950 |         | Public Correspondence, Port Operations and Ship Movement |
| 28                                              | 157.400 | 162.000 |         | Public Correspondence, Port Operations and Ship Movement |
| 60                                              | 156.025 | 160.625 |         | Public Correspondence, Port Operations and Ship Movement |
| 61                                              | 156.075 | 160.675 |         | Public Correspondence, Port Operations and Ship Movement |
| 62                                              | 156.125 | 160.725 |         | Public Correspondence, Port Operations and Ship Movement |
| 63                                              | 156.175 | 160.775 |         | Public Correspondence, Port Operations and Ship Movement |
| 64                                              | 156.225 | 160.825 |         | Public Correspondence, Port Operations and Ship Movement |
| 65                                              | 156.275 | 160.875 |         | Public Correspondence, Port Operations and Ship Movement |
| 65A                                             | 156.275 | 156.275 |         | Non-Commercial                                           |
| 66                                              | 156.325 | 160.925 |         | Public Correspondence, Port Operations and Ship Movement |
| 66A                                             | 156.325 | 156.325 |         | Non-Commercial                                           |

| International Marine VHF Channels & Frequencies |         |         |         |                                                          |
|-------------------------------------------------|---------|---------|---------|----------------------------------------------------------|
| CH                                              | TX Freq | RX Freq | Simplex | Freq Use                                                 |
| 67                                              | 156.375 | 156.375 | x       | Inter-ship, Port Operations and Ship Movement [2]        |
| 68                                              | 156.425 | 156.425 | x       | Port Operations and Ship Movement                        |
| 69                                              | 156.475 | 156.475 | x       | Inter-ship, Port Operations and Ship Movement            |
| 71                                              | 156.575 | 156.575 | x       | Port Operations and Ship Movement                        |
| 72                                              | 156.625 | 156.625 | x       | Inter-ship                                               |
| 73                                              | 156.675 | 156.675 | x       | Inter-ship [2]                                           |
| 74                                              | 156.725 | 156.725 | x       | Port operations and Ship movement                        |
| 75                                              | 156.775 | 156.775 | x       | See Note [5]                                             |
| 76                                              | 156.825 | 156.825 | x       | See Note [5]                                             |
| 77                                              | 156.875 | 156.875 | x       | Inter-ship                                               |
| 78                                              | 156.925 | 161.525 |         | Public correspondence, Port Operations and Ship Movement |
| 1078                                            | 156.925 | 156.925 |         | Public correspondence, Port Operations and Ship Movement |
| 2078                                            | 161.525 | 161.525 |         | Public correspondence, Port Operations and Ship Movement |
| 79                                              | 156.975 | 161.575 |         | Public correspondence, Port Operations and Ship Movement |
| 1079                                            | 156.975 | 156.975 |         | Public correspondence, Port Operations and Ship Movement |
| 2079                                            | 161.575 | 161.575 |         | Public correspondence, Port Operations and Ship Movement |
| 80                                              | 157.025 | 161.625 |         | Public correspondence, Port Operations and Ship Movement |
| 81                                              | 157.075 | 161.675 |         | Public correspondence, Port Operations and Ship Movement |
| 82                                              | 157.125 | 161.725 |         | Public correspondence, Port Operations and Ship Movement |
| 83                                              | 157.175 | 161.775 |         | Public correspondence, Port Operations and Ship Movement |
| 84                                              | 157.225 | 161.825 |         | Public correspondence, Port Operations and Ship Movement |
| 85                                              | 157.275 | 161.875 |         | Public correspondence, Port Operations and Ship Movement |
| 86                                              | 157.325 | 161.925 |         | Public correspondence, Port Operations and Ship Movement |
| 87                                              | 157.375 | 157.375 | x       | Port Operations and Ship Movement                        |
| 88                                              | 157.425 | 157.425 | x       | Port Operations and Ship Movement                        |

◆ Inter-ship channels are for communications between ship stations. Inter-ship communications should be restricted to Channels 6, 8, 72 and 77. If these are not available, the other channels marked for Inter-ship may be used.

◆ Channel 70 is used exclusively for Digital Selective Calling (DSC) and is not available for regular voice communications.

#### Notes:

1. Channel 06 may also be used for communications between ship stations and aircraft engaged in coordinated search and rescue operations. Ship stations should avoid harmful interference to such communications on channel 06 as well as to

communications between aircraft stations, ice breakers and assisted ships during ice seasons.

2. Within the European Maritime Area and in Canada, channels 10, 67 and 73 may also be used by the individual administrations concerned for communication between ship stations, aircraft stations and participating land stations engaged in coordinated search and rescue and anti-pollution operations in local areas. Channels 10 or 73 (depending on location) are also used for the broadcast of Marine Safety Information by the Maritime and Coast Guard Agency in the UK only.
3. Channel 13 is designated for use on a worldwide basis as a navigation safety communication channel, primarily for inter-ship navigation safety communications.

4. Channels 15 and 17 may also be used for on-board communications provided the effective radiated power does not exceed 1 Watt.
5. The use of Channels 75 and 76 should be restricted to navigation related communication only and all precautions should be taken to avoid harmful interference to channel 16. Transmit power is limited to 1 Watt.

| U.S. Marine VHF Channels and Frequencies |         |         |         |                                                                                                                                                      |
|------------------------------------------|---------|---------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| CH                                       | TX Freq | RX Freq | Simplex | Freq Use                                                                                                                                             |
| 01A                                      | 156.050 | 156.050 | x       | Port Operations and Commercial, VTS. Available only in New Orleans / Lower Mississippi area.                                                         |
| 03A                                      | 156.150 | 156.150 | x       | U.S. Government only                                                                                                                                 |
| 05A                                      | 156.250 | 156.250 | x       | Port Operations or VTS in the Houston, New Orleans and Seattle areas.                                                                                |
| 6                                        | 156.300 | 156.300 | x       | Inter-ship Safety                                                                                                                                    |
| 07A                                      | 156.350 | 156.350 | x       | Commercial                                                                                                                                           |
| 8                                        | 156.400 | 156.400 | x       | Commercial (Inter-ship only)                                                                                                                         |
| 9                                        | 156.450 | 156.450 | x       | Boater Calling. Commercial and Non-Commercial.                                                                                                       |
| 10                                       | 156.500 | 156.500 | x       | Commercial                                                                                                                                           |
| 11                                       | 156.550 | 156.550 | x       | Commercial. VTS in selected areas.                                                                                                                   |
| 12                                       | 156.600 | 156.600 | x       | Port Operations. VTS in selected areas.                                                                                                              |
| 13                                       | 156.650 | 156.650 | x       | Inter-ship Navigation Safety (Bridge-to-bridge). Ships >20meters in length maintain a listening watch on this channel in US waters.                  |
| 14                                       | 156.700 | 156.700 | x       | Port Operations. VTS in selected areas.                                                                                                              |
| 15                                       | —       | 156.750 | x       | Environmental (Receive only). Used by Class 'C' EPIRBS.                                                                                              |
| 16                                       | 156.800 | 156.800 | x       | International Distress, Safety and Calling. Ships required to carry radio, USCG, and most coast stations maintain a listening watch on this channel. |
| 17                                       | 156.850 | 156.850 | x       | State Control                                                                                                                                        |
| 18A                                      | 156.900 | 156.900 | x       | Commercial                                                                                                                                           |
| 19A                                      | 156.950 | 156.950 | x       | Commercial                                                                                                                                           |
| 20                                       | 157.000 | 161.600 |         | Port Operations (duplex)                                                                                                                             |
| 20A                                      | 157.000 | 157.000 | x       | Port Operations                                                                                                                                      |
| 21A                                      | 157.050 | 157.050 | x       | U.S. Coast Guard only                                                                                                                                |
| 22A                                      | 157.100 | 157.100 | x       | Coast Guard Liaison and Maritime Safety Information Broadcasts. Broadcasts announced on channel 16.                                                  |
| 23A                                      | 157.150 | 157.150 | x       | U.S. Coast Guard only                                                                                                                                |
| 24                                       | 157.200 | 161.800 |         | Public Correspondence (Marine Operator)                                                                                                              |
| 25                                       | 157.250 | 161.850 |         | Public Correspondence (Marine Operator)                                                                                                              |
| 26                                       | 157.300 | 161.900 |         | Public Correspondence (Marine Operator)                                                                                                              |
| 27                                       | 157.350 | 161.950 |         | Public Correspondence (Marine Operator)                                                                                                              |
| 28                                       | 157.400 | 162.000 |         | Public Correspondence (Marine Operator)                                                                                                              |
| 61A                                      | 156.075 | 156.075 | x       | U.S. Government only                                                                                                                                 |
| 63A                                      | 156.175 | 156.175 | x       | Port Operations and Commercial, VTS. Available only in New Orleans / Lower Mississippi area.                                                         |
| 64A                                      | 156.225 | 156.225 | x       | U.S. Coast Guard only                                                                                                                                |
| 65A                                      | 156.275 | 156.275 | x       | Port Operations                                                                                                                                      |
| 66A                                      | 156.325 | 156.325 | x       | Port Operations                                                                                                                                      |
| 67                                       | 156.375 | 156.375 | x       | Commercial. Used for Bridge-to-bridge communications in lower Mississippi River. Inter-ship only.                                                    |
| 68                                       | 156.425 | 156.425 | x       | Non-Commercial                                                                                                                                       |



| U.S. Marine VHF Channels and Frequencies |         |         |         |                                                             |
|------------------------------------------|---------|---------|---------|-------------------------------------------------------------|
| CH                                       | TX Freq | RX Freq | Simplex | Freq Use                                                    |
| 69                                       | 156.475 | 156.475 | x       | Non-Commercial                                              |
| 70                                       | 156.525 | 156.525 | x       | Non-Commercial                                              |
| 71                                       | 156.575 | 156.575 | x       | Non-Commercial                                              |
| 72                                       | 156.625 | 156.625 | x       | Non-Commercial (Inter-ship only)                            |
| 73                                       | 156.675 | 156.675 | x       | Port Operations                                             |
| 74                                       | 156.725 | 156.725 | x       | Port Operations                                             |
| 77                                       | 156.875 | 156.875 | x       | Port Operations (Inter-ship only)                           |
| 78A                                      | 156.925 | 156.925 | x       | Non-Commercial                                              |
| 79A                                      | 156.975 | 156.975 | x       | Commercial. Non-Commercial in Great Lakes only.             |
| 80A                                      | 157.025 | 157.025 | x       | Commercial. Non-Commercial in Great Lakes only              |
| 81A                                      | 157.075 | 157.075 | x       | U.S. Government only – Environmental protection operations. |
| 82A                                      | 157.125 | 157.125 | x       | U.S. Government only                                        |
| 83A                                      | 157.175 | 157.175 | x       | U.S. Coast Guard only                                       |
| 84                                       | 157.225 | 161.825 |         | Public Correspondence (Marine Operator)                     |
| 84A                                      | 157.225 | 157.225 |         | Non-Commercial                                              |
| 85                                       | 157.275 | 161.875 |         | Public Correspondence (Marine Operator)                     |
| 85A                                      | 157.275 | 157.275 |         | Non-Commercial                                              |
| 86                                       | 157.325 | 161.925 |         | Public Correspondence (Marine Operator)                     |
| 86A                                      | 157.325 | 157.325 |         | Non-Commercial                                              |
| 87                                       | 157.375 | 161.975 |         | Public Correspondence Marine Operator)                      |
| 87A                                      | 157.375 | 157.375 |         | Non-Commercial                                              |
| 88                                       | 157.425 | 162.025 |         | Public Correspondence only near Canadian border             |
| 88A                                      | 157.425 | 157.425 | x       | Commercial, Inter-ship only                                 |

- ◆ Recreational boaters normally use channels listed as Non-Commercial: 68, 69, 71, 72, 78A.
  - ◆ Channel 70 is used exclusively for Digital Selective Calling (DSC) and is not available for regular voice communications.
  - ◆ Channels 75 and 76 are reserved as guard bands for Channel 16 and are not available for regular voice communications.
3. Channel is Receive Only.
  4. Channel 16 is used for calling other stations or for distress alerting.
  5. Output power is fixed at 1 watt only.
  6. Output power is initially set to 1 watt. User can temporarily override this restriction to transmit at high power.

#### Notes:

1. The letter “A” following a channel number indicates simplex use of the ship station transmit side of an international semi-duplex channel. Operations are different from that of international operations on that channel.
2. Channel 13 should be used to contact a ship when there is danger of collision. All ships of length 20 meters or greater are required to guard VHF channel 13, in addition to VHF channel 16, when operating

| Canadian Marine VHF Channels and Frequencies |         |         |                                                                                                                                                                                                               |
|----------------------------------------------|---------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CH                                           | TX Freq | RX Freq | Area of Operation Use                                                                                                                                                                                         |
| 1                                            | 156.050 | 160.650 | PC Public Correspondence                                                                                                                                                                                      |
| 2                                            | 156.100 | 160.700 | PC Public Correspondence                                                                                                                                                                                      |
| 3                                            | 156.150 | 160.750 | PC Public Correspondence                                                                                                                                                                                      |
| 04A                                          | 156.200 | 156.200 | PC Inter-ship, Ship/Shore and Safety: Canadian Coast Guard S&R                                                                                                                                                |
| 05A                                          | 156.250 | 156.250 | Ship Movement                                                                                                                                                                                                 |
| 6                                            | 156.300 | 156.300 | All areas Inter-ship, Commercial, Non commercial and Safety: May Be used for search and rescue communications between ships and aircraft.                                                                     |
| 07A                                          | 156.350 | 156.350 | All areas Inter-ship, Ship/Shore, Commercial                                                                                                                                                                  |
| 8                                            | 156.400 | 156.400 | WC, EC Inter ship, Commercial and Safety: Also assigned for operations in the Lake Winnipeg area.                                                                                                             |
| 9                                            | 156.450 | 156.450 | AC Inter-ship, Ship/Shore, Commercial, Non-commercial and Ship Movement: May be used to communicate with aircraft and Helicopters in predominantly maritime support operations.                               |
| 10                                           | 156.500 | 156.500 | AC, GL Inter-ship, Ship/Shore, Commercial, Non-commercial, Safety and Ship Movement: May also be used for communications with aircraft engaged in coordinated search and rescue and antipollution operations. |
| 11                                           | 156.550 | 156.550 | PC, AC, GL Inter-ship, Ship/Shore, Commercial, Non-commercial and Ship Movement: Also used for pilotage purposes.                                                                                             |
| 12                                           | 156.600 | 156.600 | WC, AC, GL Inter-ship, Ship/Shore, Commercial, Non-commercial and Ship Movement: Port operations and pilot information and messages.                                                                          |
| 13                                           | 156.650 | 156.650 | All areas Inter-ship, Commercial, Non-commercial and Ship Movement: Exclusively for bridge-to-bridge navigational traffic. Limited to 1-watt maximum power.                                                   |
| 14                                           | 156.700 | 156.700 | AC, GL Inter-ship, Ship/Shore, Commercial, Non-commercial and Ship Movement: Port operations and pilot information and Messages.                                                                              |
| 15                                           | 156.750 | 156.750 | All areas Inter-ship, Ship/Shore, Commercial, Non-commercial and Ship Movement: All May also be used for on-board Communications.                                                                             |
| 16                                           | 156.800 | 156.800 | All areas International Distress, Safety and Calling.                                                                                                                                                         |
| 17                                           | 156.850 | 156.850 | All areas Inter-ship, Ship/Shore, Commercial, Non-commercial and Ship Movement: All operations limited to 1-watt maximum power. May also be used for on-board Communications.                                 |
| 18A                                          | 156.900 | 156.900 | All areas Inter-ship, Ship/Shore and Commercial: Towing on the Pacific Coast.                                                                                                                                 |
| 19A                                          | 156.950 | 156.950 | All areas except PC Inter-ship and Ship/Shore: Canadian Coast Guard only.                                                                                                                                     |
| 20                                           | 157.000 | 161.600 | All areas Ship/Shore, Safety and Ship Movement: Port operation                                                                                                                                                |
| 21A                                          | 157.050 | 157.050 | All areas Inter-ship and Ship/Shore: Canadian Coast Guard only.                                                                                                                                               |
| 21B                                          | —       | 161.650 | All areas Safety: Continuous Marine Broadcast (CMB) service.                                                                                                                                                  |

| Canadian Marine VHF Channels and Frequencies |         |         |                                                                                                                                                                                                                                                                                                                                                              |
|----------------------------------------------|---------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CH                                           | TX Freq | RX Freq | Area of Operation Use                                                                                                                                                                                                                                                                                                                                        |
| 22A                                          | 157.100 | 157.100 | All areas Inter-ship, Ship/Shore, Commercial and Non-commercial: For communications between Canadian Coast Guard and non-Canadian Coast Guard stations only.                                                                                                                                                                                                 |
| 23                                           | 157.150 | 161.750 | PC Ship/Shore and Public Correspondence: Also in the inland waters of British Columbia and the Yukon.                                                                                                                                                                                                                                                        |
| 23B                                          | —       | 161.750 | Continuous Marine Broadcast Service                                                                                                                                                                                                                                                                                                                          |
| 24                                           | 157.200 | 161.800 | All areas Ship/Shore and Public Correspondence                                                                                                                                                                                                                                                                                                               |
| 25                                           | 157.250 | 161.850 | PC Ship/Shore and Public Correspondence: Also assigned for operations in the Lake Winnipeg area.                                                                                                                                                                                                                                                             |
| 25B                                          | —       | 161.850 | AC Safety: Continuous Marine Broadcast (CMB) service.                                                                                                                                                                                                                                                                                                        |
| 26                                           | 157.300 | 161.900 | All areas Ship/Shore, Safety and Public Correspondence                                                                                                                                                                                                                                                                                                       |
| 27                                           | 157.350 | 161.950 | AC, GL, PC Ship/Shore and Public Correspondence                                                                                                                                                                                                                                                                                                              |
| 28                                           | 157.400 | 162.000 | PC Ship/Shore, Safety and Public Correspondence                                                                                                                                                                                                                                                                                                              |
| 28B                                          | —       | 162.000 | AC Safety: Continuous Marine Broadcast (CMB) service.                                                                                                                                                                                                                                                                                                        |
| 60                                           | 156.025 | 160.625 | PC Ship/Shore and Public Correspondence.                                                                                                                                                                                                                                                                                                                     |
| 61A                                          | 156.075 | 156.075 | EC Inter-ship, Ship/Shore and Commercial: Commercial fishing only.                                                                                                                                                                                                                                                                                           |
| 62A                                          | 156.125 | 156.125 | EC Inter-ship, Ship/Shore and Commercial: Commercial fishing only.                                                                                                                                                                                                                                                                                           |
| 63A                                          | 156.175 | 156.175 | Tow Boats - BCC area                                                                                                                                                                                                                                                                                                                                         |
| 64                                           | 156.225 | 160.825 | PC Ship/Shore and Public Correspondence                                                                                                                                                                                                                                                                                                                      |
| 64A                                          | 156.225 | 156.225 | EC Inter-ship, Ship/Shore and Commercial: Commercial fishing only.                                                                                                                                                                                                                                                                                           |
| 65A                                          | 156.275 | 156.275 | Inter-ship, Ship/Shore, Commercial, Non-commercial, Safety: Search & rescue and antipollution operations on the Great Lakes. Towing on the Pacific Coast. Port operations only in the St. Lawrence River areas with 1W maximum power. Pleasure craft in the inland waters of Alberta, Saskatchewan and Manitoba (excluding Lake Winnipeg and the Red River). |
| 66A                                          | 156.325 | 156.325 | Inter-ship, Ship/Shore, Commercial, Non-commercial, Safety and Ship Movement: Port operations only in the St. Lawrence River/Great Lakes Areas with 1-watt maximum power.                                                                                                                                                                                    |
| 67                                           | 156.375 | 156.375 | All areas except EC Inter-ship, Ship/Shore, Commercial, Non-commercial, Safety: May also be used for communications with aircraft engaged in coordinated search and rescue and antipollution operations.                                                                                                                                                     |
| 68                                           | 156.425 | 156.425 | All areas Inter-ship, Ship/Shore and Non-commercial: For marinas and yacht clubs.                                                                                                                                                                                                                                                                            |
| 69                                           | 156.475 | 156.475 | All areas except EC Inter-ship, Ship/Shore, Commercial and Non-commercial                                                                                                                                                                                                                                                                                    |
| 71                                           | 156.575 | 156.575 | PC Inter-ship, Ship/Shore, Commercial, Non-commercial, Safety and Ship Movement the East Coast and on Lake Winnipeg.                                                                                                                                                                                                                                         |
| 72                                           | 156.625 | 156.625 | EC, PC Inter-ship, Commercial and Non-commercial: May be used to communicate with aircraft and helicopters in predominantly maritime support                                                                                                                                                                                                                 |

| Canadian Marine VHF Channels and Frequencies |         |         |                                                                                                                                                                                                          |
|----------------------------------------------|---------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CH                                           | TX Freq | RX Freq | Area of Operation Use                                                                                                                                                                                    |
| 73                                           | 156.675 | 156.675 | All areas except EC Inter-ship, Ship/Shore, Commercial, Non-commercial, Safety: May also be used for communications with aircraft engaged in coordinated search and rescue and antipollution operations. |
| 74                                           | 156.725 | 156.725 | EC, PC Inter-ship, Ship/Shore, Commercial, Non-commercial and Ship Movement.                                                                                                                             |
| 75                                           | 156.775 | 156.775 | Simplex port operation, Ship movement and navigation related communication only. 1 watt maximum                                                                                                          |
| 76                                           | 156.825 | 156.825 | Simplex port operation, Ship movement and navigation related communication only. 1 watt maximum                                                                                                          |
| 77                                           | 156.875 | 156.875 | Inter-ship, Ship/Shore, Safety and Ship Movement: Pilotage on Pacific Coast. Port operations only in the St. Lawrence River/Great Lakes areas with 1W maximum power.                                     |
| 78A                                          | 156.925 | 156.925 | EC, PC Inter-ship, Ship/Shore and Commercial                                                                                                                                                             |
| 79A                                          | 156.975 | 156.975 | EC, PC Inter-ship, Ship/Shore and Commercial                                                                                                                                                             |
| 80A                                          | 157.025 | 157.025 | EC, PC Inter-ship, Ship/Shore and Commercial                                                                                                                                                             |
| 81A                                          | 157.075 | 157.075 | Inter-ship and Ship/Shore: Canadian Coast Guard use only in the St. Lawrence River/ Great Lakes areas.                                                                                                   |
| 82A                                          | 157.125 | 157.125 | Inter-ship and Ship/Shore: Canadian Coast Guard use only in the St. Lawrence River/ Great Lakes areas.                                                                                                   |
| 83A                                          | 157.175 | 157.175 | EC Inter-ship and Ship/Shore: Canadian Coast Guard and other Government agencies.                                                                                                                        |
| 83B                                          | —       | 161.775 | AC, GL Safety: Continuous Marine Broadcast (CMB) Service.                                                                                                                                                |
| 84                                           | 157.225 | 161.825 | PC Ship/Shore and Public Correspondence                                                                                                                                                                  |
| 85                                           | 157.275 | 161.875 | AC, GL, NL Ship/Shore and Public Correspondence                                                                                                                                                          |
| 86                                           | 157.325 | 161.925 | PC Ship/Shore and Public Correspondence                                                                                                                                                                  |
| 87                                           | 157.375 | 161.975 | AC, GL, NL Ship/Shore and Public Correspondence                                                                                                                                                          |
| 88                                           | 157.425 | 162.025 | AC, GL, NL Ship/Shore and Public Correspondence                                                                                                                                                          |

AC: Atlantic Coast, Gulf and St. Lawrence River up to and including Montreal

EC: (East Coast): includes NL, AC, GL and Eastern Arctic areas

GL: Great Lakes (including St. Lawrence above Montreal)

NL: Newfoundland and Labrador

PC: Pacific Coast

WC: (West Coast): Pacific Coast, Western Arctic and Athabasca-Mackenzie Watershed areas All areas: includes East and West Coast areas

#### Notes:

1. An “A” following a channel number indicates simplex use of the ship station transmit side of an international

duplex channel. Operations are different from that of international operations on that channel.

2. Channel 16 is used for calling other stations or for distress alerting.
3. The letter “B” following a channel number indicates simplex use of the coast station transmit side of an international duplex channel. That is, the channel is Receive Only.
4. Channel 70 is used exclusively for Digital Selective Calling (DSC) and is not available for regular voice communications.
5. Channels 75 and 76 are reserved as guard bands for Channel 16 and are not available for regular voice communications.

## European Private Channels and Frequencies

In addition to the channels listed above in the International Marine VHF Channels & Frequencies table, your radio may also include some of the following private channels. Which channels are included depend upon the country in which the radio is to be operated and whether you possess the appropriate licensing

| Country                              | CH | TX Freq | RX Freq | Freq Use |
|--------------------------------------|----|---------|---------|----------|
| Belgium                              | 96 | 162.425 | 162.425 | Marina   |
| Denmark                              | L1 | 155.500 | 155.500 | Leisure  |
|                                      | L2 | 155.525 | 155.525 | Leisure  |
| Denmark, Finland,<br>Norway & Sweden | F1 | 155.625 | 155.625 | Fishing  |
|                                      | F2 | 155.775 | 155.775 | Fishing  |
|                                      | F3 | 155.825 | 155.825 | Fishing  |
| Finland, Norway&Sweden               | L1 | 155.500 | 155.500 | Leisure  |
|                                      | L2 | 155.525 | 155.525 | Leisure  |
|                                      | L3 | 155.650 | 155.650 | Leisure  |
| Netherlands                          | 31 | 157.550 | 162.150 | Marina   |
|                                      | 37 | 157.850 | 157.850 | Leisure  |
| UK                                   | M1 | 157.850 | 157.850 | Marina   |
|                                      | M2 | 161.425 | 161.425 | Marina   |

**Note:** A license may be required to operate the radio on the private channels. It is your responsibility to obtain the proper license to operate the radio on these frequencies.

## Weather Channels and Frequencies

| WX channel | Frequency(MHz) |         | Remarks               |
|------------|----------------|---------|-----------------------|
|            | Transmit       | Receive |                       |
| 1          | RX only        | 162.550 | Weather(receive only) |
| 2          | RX only        | 162.400 | Weather(receive only) |
| 3          | RX only        | 162.475 | Weather(receive only) |
| 4          | RX only        | 162.425 | Weather(receive only) |
| 5          | RX only        | 162.450 | Weather(receive only) |
| 6          | RX only        | 162.500 | Weather(receive only) |
| 7          | RX only        | 162.525 | Weather(receive only) |
| 8          | RX only        | 161.650 | Weather(receive only) |
| 9          | RX only        | 161.775 | Weather(receive only) |
| 10         | RX only        | 163.275 | Weather(receive only) |

# Specifications

## ---VHF radio

|                                            |                                                                   |
|--------------------------------------------|-------------------------------------------------------------------|
| TX Frequency.....                          | 156.025--157.425MHz                                               |
| RX Frequency.....                          | 156.300--162.000MHz                                               |
| Digital Selectivity Calling (DSC).....     | Class-D with dual receiver (individual CH70)                      |
| CH70.....                                  | 156.525MHz                                                        |
| Channel spacing.....                       | 25kHz                                                             |
| Channel banks.....                         | All INT/USA/Canadian<br>10 WX (only available for USA and Canada) |
| Modulation mode.....                       | FM (16K0G3E), DSC/ATIS (16K0G2B)                                  |
| Antenna impedance.....                     | 50Ω (nominal)                                                     |
| Power supply.....                          | 13.8V DC                                                          |
| Sensitivity at 12dB SINAD.....             | ≤-6 dBμV (EMF)                                                    |
| Squelch sensitivity.....                   | ≤-6 dBμ (EMF)                                                     |
| Spurious Resp.Rej.....                     | 70 dB                                                             |
| Adjacent Channel Rejection.....            | 70 dB                                                             |
| Audio output power.....                    | 5W @ 4Ω                                                           |
| Audio Power Output (hailer).....           | 30W @ 4Ω                                                          |
| Audio Distortion.....                      | 5%                                                                |
| RF Output power.....                       | High:25W / Low:1W                                                 |
| Harmonic Emissions.....                    | 0.25μW                                                            |
| Current drain, Stby / TX (high) / RX ..... | 0.5A/ 6A / 1A (@ 13.8V                                            |
| Maximum frequency deviation.....           | ±5.0kHz                                                           |
| Local Oscillator mode.....                 | PLL                                                               |
| Ambient operating temperatures.....        | -15°C to +55°C                                                    |
| Waterproof.....                            | IP67                                                              |
| Compass safe distance.....                 | 0.8m                                                              |
| Buddy list (TS18\TS18S).....               | 20/50/100                                                         |
| Private channels.....                      | 99                                                                |

## ---Communications

|                                             |                                                             |
|---------------------------------------------|-------------------------------------------------------------|
| Comm. port NMEA 0183.....                   | 9600 baud                                                   |
| Comm. port NMEA 2000 (TS18/TS18S only)..... | NMEA 2000                                                   |
| NMEA 0183 input (receive).....              | RMC, GGA, GLL, ZDA, VTG, GSV                                |
| NMEA 0183 output (transmit).....            | DSC (for DSC call), DSE (for enhanced position) AIVDM (AIS) |

## ---AIS Receiver

|                         |                        |
|-------------------------|------------------------|
| Frequency .....         | 161.9750MHz/162.025MHz |
| Number of Channels..... | (2) Dual Channels      |

## ---Dimension & Weight

|                                                |                         |
|------------------------------------------------|-------------------------|
| Fixed unit dimensions (L/W/H).....             | 180 mm x 91 mm x 38 mm  |
| Fixed unit dimensions on mounting bracket..... | 195 mm x 115 mm x 38 mm |
| Fixed unit Weight.....                         | 1.0 kg                  |

## ---GPS

|                            |                                                          |
|----------------------------|----------------------------------------------------------|
| Channels.....              | 56                                                       |
| Sensitivity.....           | Tracking:-161dBm Reacquisition:-160dBm ColdStart:-147dBm |
| Cold Start/ Hot Start..... | 60 s econds, average/40 second, average                  |

# Declaration of Conformity with Marine VHF Radio

**Product Designation:**

Maritime Radio, Model TS18S, TS18, TS18C, TS18 Non DSC

Certificate No: 1622-RED-191403

Brand: HIMUNICATION

Trademark number: 11005103

Applicant Name & Address: Shenzhen Jiuzhou Himunication Technology Co., Ltd Factory 1, 3rd Floor, Block C, Huafeng Second Industry Park, Hangcheng Road, Xixiang town, Baoan District, Shenzhen, China

**Radio Equipment Directive 2014/53/EU**

| Essential Requirement |        | Applied Specifications/Standards                                                          | Documentary Evidence                                                                   | Result  |
|-----------------------|--------|-------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|---------|
| Art 3.1(a)            | Health | EN 50385:2017<br>EN 62479:2010                                                            | Test Report TRE 1808018504<br>Test Report TRE 1808018507                               | conform |
| Art 3.1(a)            | Safety | EN 62368-1:2014+A11:2017                                                                  | Test Report TRE 18080416R1                                                             | conform |
| Art 3.1(b)            | EMC    | EN 301843-1/-2 V2.2.0<br>EN 301489-1 V2.2.0<br>EN 301489-17 V3.2.0<br>EN 301489-19 V2.1.0 | Test Report TRE 1808018502<br>Test Report TRE 1808018506                               | conform |
| Art 3.2               | Radio  | EN 301025 V2.2.1<br>EN 300338-3 V1.2.1<br>EN 300328 V2.1.1<br>EN 303413 V1.1.1            | Test Report TRE 1808018501<br>Test Report TRE 1808018505<br>Test Report TRE 1808018503 | conform |

The product shall be marked with the CE conformity marking as shown on the right.

**Technical Details:**

Frequency Range Tx: 156.025-157.425MHz

Frequency Range Rx: 156.300-162.000MHz

Rated Output Power: 25W/1W

Maximum antenna gain: 2.15 dBi

Modulation Type: PM, FSK

Channel Separation: 25kHz

Shenzhen, April 22, 2019

Francis Sun, General Manager