IC-M505 GMDSS DSC RADIO SIMULATOR

DISCLAIMER

THIS IS NOT A 100% REAL SIMULATION OF THE ICOM IC-M 505 VHF DSC TRANSCEIVER, AND SHOULD BE USED ONLY AS GENERIC EXAMPLE FOR TRAINING PURPOSES ONLY. MAY NOT MEET/RESPECT ALL INTERNATIONAL REQUIREMENTS, RULES OR REGULATIONS AS ITU R-493 AND OTHER SUBSEQUENT DEVELOPMENT OR AMENDEMENTS.

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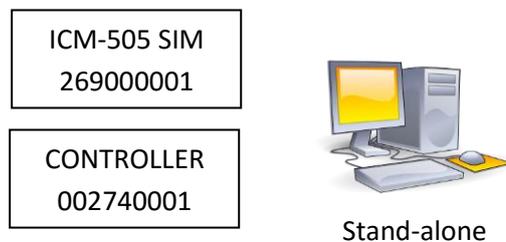**!! USE AT YOUR OWN RISK FOR TRAINING PURPOSES ONLY !!**

REQUIREMENTS

• Personal computer with a Microsoft Windows operating system (tested on XP / W7 / W10).

• Ethernet or WIFI interface (necessary if you want to connect to other PC).

• Compatible Soundcard, speaker, microphone or headset.

• Mouse.

• Video resolution 1280x1024, 1920x1080 pixels or more recommended (16/32 bit color depth).
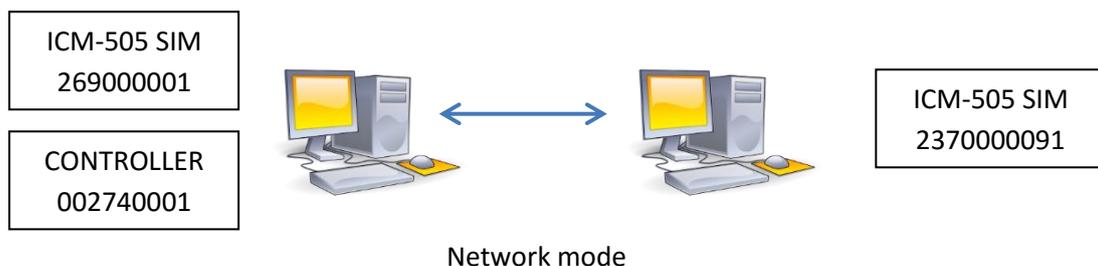
TECHNICAL NOTES

• The simulator use the "UDP Broadcast" protocol to communicate with the "Controller" and other copies of simulator if installed on other PC.

• As result, it's possible to connect as many PC as you want, running the same application (please setup each radio with a different MMSI).

• To simulate real world situation, you may connect two PC directly via an Ethernet crossed-cable, or connect more PCs via an Ethernet HUB or SWITCH (see drawing).

• Some firewall or antivirus programs may need to be configured to enable communications between PC over the UDP ports 8090 / 8091 (see your software help for configuration).

CONNECTION EXAMPLES
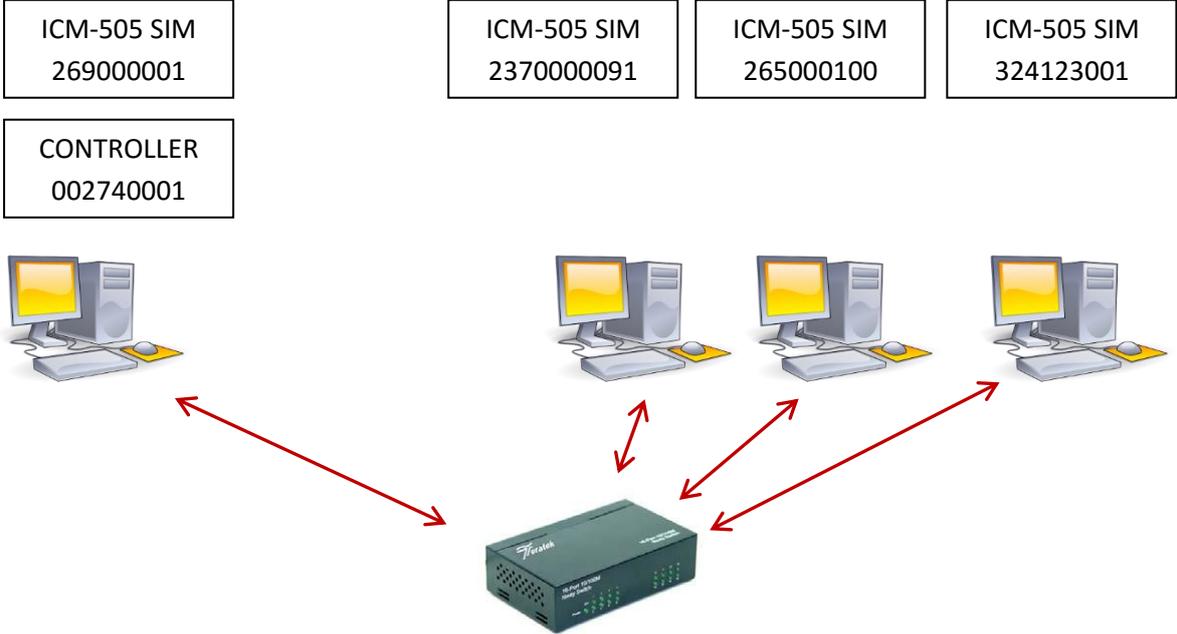
1. Single PC installation:

| ICM-505 SIM |
| 269000001 |

| CONTROLLER |
| 002740001 |

Stand-alone

2. Two PC cross-cable connection:

| ICM-505 SIM |
| 269000001 |

| CONTROLLER |
| 002740001 |

| ICM-505 SIM |
| 2370000091 |

Network mode

3. Multiple PC over Ethernet

| ICM-505 SIM 269000001 | | ICM-505 SIM 2370000091 | ICM-505 SIM 265000100 | ICM-505 SIM 324123001 |

| CONTROLLER 002740001 |

IC-M505 RADIO SETUP

1. RADIO > MMSI   : Your local radio MMSI. Should be a single and different on each radio.
2. RADIO > GROUP   : Your group radio MMSI, to be called with a single MMSI.
3. RADIO > SHIP NAME : the station's name as displayed on the simulator status bar (optional).
4. RADIO > CALL SIGN   : the station's call sign as displayed on the simulator status bar (optional).
5. SIM MODE:
   a. Stand-Alone : to be set when simulator and controller are used on same PC
   b. Network   : to be set when multiple PC are used (see connections example).

6. OPTIONS > Screen Position: Remember the simulator's window position each time it is started.
7. NETWORK : In case the PC has more than one Ethernet interface, it define the one to be used. Default setting = 0.0.0.0 mean use any available interface.
8. GPS SETUP > LAT : define the base latitude degrees (00 – 89 N/S) to be used as default.
9. GPS SETUP > LON : define the base longitude degrees (000 – 179 E/W) to be used as default.
10. GPS SETUP > UTC : define the difference between UTC and your local Time.

11. STATIONS : names and MMSI of know stations present in the simulation.
12. GROUPS   : names and MMSI of know stations present in the simulation.

IC-M 505 AUDIO SETUP
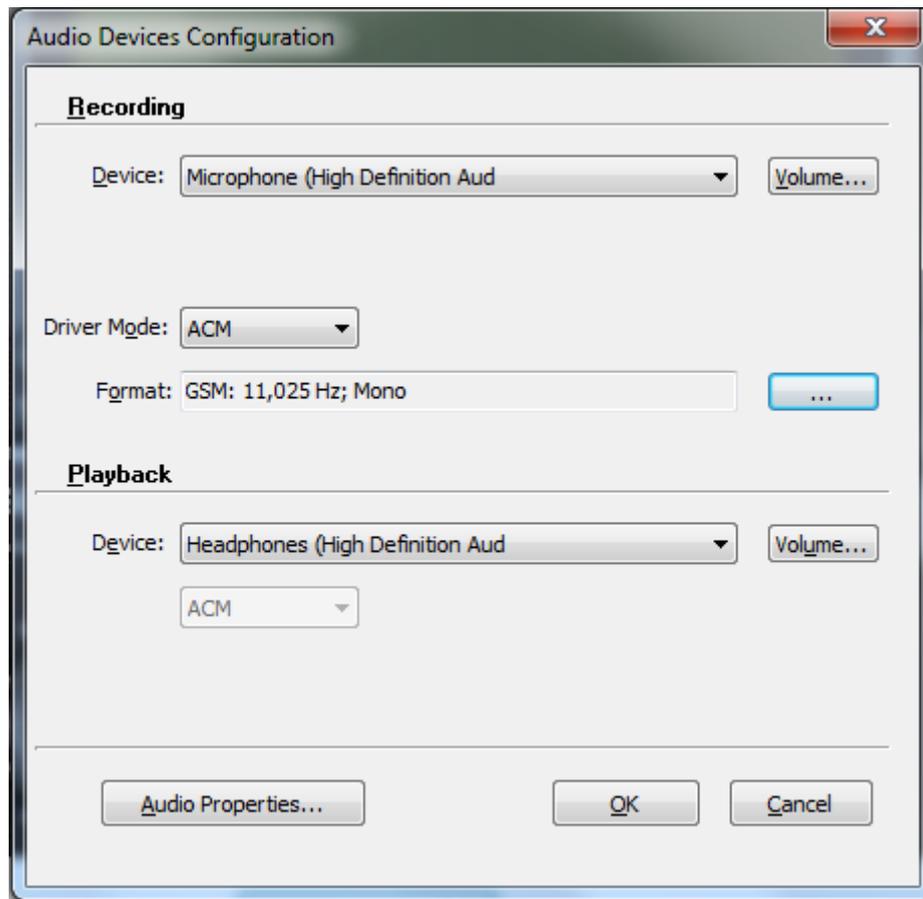
1. Recording:
    a. Device: Select your audio input device, as microphone or audio interface.
    b. Driver Mode: select driver for audio communications. Default: ACM
    c. Format: define quality for audio communication. Default: GSM, 11025Hz, Mono.
    d. Volume: setting Audio devices volume and properties.

2. Playback:
    a. Device: Select your output audio device, as speaker, headphone, etc.
    b. Volume: setting Audio devices volume and properties.

3. Audio Properties: Inspect and modify your PC audio setting and properties.

IC-M 505 RADIO CONTROLS

- **POWER** : Press briefly to turn ON / OFF the radio .

- **VOL KNOB** : Turn CW or CCW to set audio volume.

- **SQL KNOB** : Turn CW or CCW to set the desired squelch threshold level.

- **H / L** : Press briefly to select Hi or Low transmission power (25W or 1W) .

- **SCAN** : Press briefly to start / stop the scan function . Only TAG channel will be scanned.

- **DIAL** : Press briefly to return to the last channel selected with the dial rotary selector. Press and hold to start the dual watch function. Move cursor backwards one step during position / time input.

- **CH / ENTER** : Press briefly to accept function. Rotate to select desired communication channel or to select menu functions and / or input data.

- **16 / C**: Press briefly to recall immediately CH-16. Press and hold to recall the preferred CALL channel. Move cursor forward one step during position / time input.

- **DISTRESS**: Used to initiate the transmission of a DSC Distress Call.

- **MENU** : Press briefly to access DSC MENU and SETUP mode. Not all menu functions are yet available on this simulator.

- **CLEAR** : Press briefly to .

- **HAIL :** Press briefly to access the hailer functions . Not fully implemented on this simulator.

- **IC** : Press briefly to access the Intercom functions. Not implemented on this simulator.

IC-M 505 RADIO DISPLAY
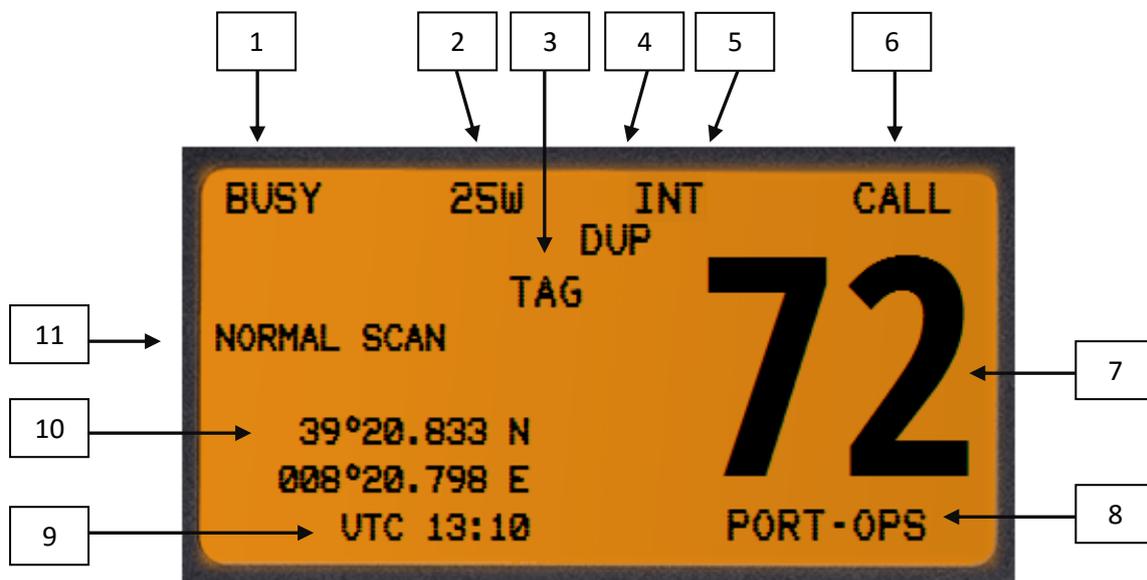
1. **BUSY / TX**: Appears if the radio is receiving a signal or when squelch open (BUSY) or when in transmission mode (TX).

2. **TX POWER**: Indicates if transmitter power is set to 25W (HI) or to 1W (LOW).

3. **TAG INDICATOR**: appears when a tagged channel is selected.

4. **DUPLEX INDICATOR**: appears when a duplex channel is selected.

5. **CHANNEL GROUP**: indicates which channel group is selected (INT, USA, ATIS, DSC).

6. **CALL CHANNEL**: appears when the preset CALL channel is selected.

7. **CHANNEL READOUT**: Indicates the current selected operating channel.

8. **CHANNEL COMMENT**: show the name assigned to the selected channel.

9. **TIME**: Show the current time data if a GPS is connected or if manually inserted.

10. **POSITION**: indicate the current position if GPS is connected or if manual inserted, in Latitude and Longitude.

11. **SCAN INDICATOR**: show the status and mode of scan function.

NB: for further detailed information, please see the Icom IC-M 505 user manual.

DSC CALLING PROCEDURES

DSC DISTRESS ALERT / SIMPLE PROCEDURE

A distress call should be transmitted if, in the opinion of the Master, the ship or a person is in distress and requires immediate assistance. A distress call should include the ship's position and time of validity.
They are included automatically when a GPS receiver is connected. If no GPS is connected and situation permit, input manually your position and time of validity.

1. Lift the red DISTRESS switch cover, then press and hold the [DISTRESS] key.
    The DISTRESS menu will appear on the LCD. The backlight of the LCD flashes while the radio display is counting down.

2. The IC-M 505 watches for an DSC acknowledgment call on CH-70 or a voice call on CH-16 from a coast station or another vessel.

3. When a distress DSC ACK is received on CH-70, a DSC DISTRESS alarm sounds and CH-16 will be automatically selected. The LCD shows the MMSI of the station responding to your distress.

4. If no DSC ACK is received, the Distress alert will be repeated at approximately 4 minute intervals until a DSC ACK is received.

5. To cancel the DSC Distress alarm signal from the speaker, press the CLR key.

6. Best practice: after DSC Distress call is transmitted on CH-70, wait 30 second then select CH-16 and transmit a voice DISTRESS CALL and DISTRESS MESSAGE.

7. If a DSC ACK is received on CH-70 or a station respond to your distress call on CH-16, pick up the microphone, press the PTT button and advise your distress situation.

DSC DISTRESS ALERT WITH NATURE OF DISTRESS

The IC-M 505 simulator is capable of transmitting a DSC Distress Alert with the following "Nature of Distress" categories:

UNDESIGNATED, FIRE, FLOODING, COLLISION, GROUNDING, CAPSIZING, SINKING, ADRIFT, ABANDONING, PIRACY, MOB

1. Press the **[MENU]** key. The <DSC MENU> will appear.

2. Rotate **[CHANNEL]** to select <DISTRESS SETTING> and then push **[CHANNEL.ENTER]**.

3. The <DISTRESS> menu will appear on the LCD.

4. Rotate the **[CHANNEL]** to select the desired nature of distress category, then press the **[CHANNEL.ENTER]**.

5. Regardless of a GPS receiver connection, the current position / time information appear.

6. If it's not necessary to input or modify the information, push **[CHANNEL.ENTER]** or **[16/C]** several time to skip the data input steps.

7. The position information appears. Set your position (lat and long) by rotating the **[CHANNEL]**.

8. Push **[CLR]** one sec. to clear the position and UTC time data.

9. Push **[CLR]** to cancel and return to the DSC Menu.

10. Press and hold the **[DISTRESS]** key until a Distress Alert is transmitted.

11. After 2 sec. the transceiver will be set to CH-16 automatically.

12. Perform steps 2 to 7 of the basic operation described on previous section.

```
        -- DSC MENU --
    Select Item
        All Ships Call
        Position Request
        Position Report
        Polling Request
        Received Call
      > Distress Setting
```

```
        -- DSC MENU --
    Select Nature
        Undesignated
        Explosion
      > Flooding
        Collision

    < CLR > Exit  /  ENT > OK >
```

```
        -- DSC MENU --
    Input Position
    Latitude
      41° _ . ___ N
    Longitude
      ___° __ . ___ W
    < CLR 1sec >  Null Data >
    < CLR > Exit / ENT > OK >
```

```
        -- DSC MENU --
    Input UTC Time

      12:34


    < CLR 1sec >  Null Data >
    < CLR > Exit / ENT > OK >
```

CANCELLING A DSC DISTRESS ALERT

After a DSC DISTRESS CALL is transmitted, it is repeated every 4 minutes until the call is cancelled by the user or until the radio is turned OFF and ON again.

The IC-M 505 has the capability to transmit a DSC DISTRESS CANCEL call by pressing the **[CLR]**.

- A DSC Distress Cancel will be transmitted on CH-70 then the transceiver will be set to CH-16 automatically and normal operation will be resumed.
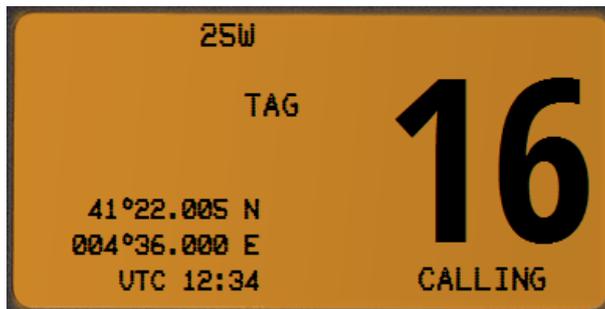
RECEIVING A DSC DISTRESS ALERT

1. When a DSC Distress Alert is received, an emergency alarm sounds and the transceiver will be set to CH-16 automatically.
2. The display will show the MMSI of the vessel transmitting the distress.
3. Push the **[CLR]** key to stop the alarm sound.
4. Push the **[CLR]** key again to return to normal radio operation.

ALL SHIPS CALL

The ALL SHIPS CALL functions allow contact to be established with other vessels and coast stations without knowing their own MMSI ID. Also, priority for the call can be designated as "URGENCY" or "SAFETY".

- URGENCY CALL
    - This type of call is used when a vessel may not truly be in distress, but has a potential problem that may lead to a distress situation. This DSC call is usually followed by an Urgency call on CH-16 using radio-telephony (PAN PAN).

- SAFETY CALL
    - This type of call is used to transmit important navigational or meteorological information to other vessels. This DSC call is usually followed by a Safety call on CH-16 using radio-telephony (SECURITE).

1. Press the **[MENU]** key. The <DSC MENU> will appear.

2. Rotate **[CHANNEL]** to select <ALL SHIPS CALL> then push **[CHANNEL.ENTER]**.

3. Rotate **[CHANNEL]** to select the desired category then push **[CHANNEL.ENTER]**.

4. Push **[CHANNEL.ENTER]** to transmit the DSC call on CH-70.

5. After the All Ship Call has been transmitted, the screen will indicate the TX is completed.

6. Push **[CLR]** or wait 2 second to return to normal radio operation.

7. The transceiver will be set to CH-16 automatically.

```
      -- DSC MENU --
Select Item
   Position Input
   Individual Call
   Group Call
 ⇒ All Ships Call
   Position Request
   Position Report
```

```
      -- DSC MENU --
Select Category
 ⇒ Safety
   Urgency



 ⟨ CLR ⇒ Exit / ENT ⇒ OK ⟩
```

```
      -- DSC MENU --

 All Ships Call Ready




 ⟨ CLR ⇒ Exit  /  ENT ⇒ OK ⟩
```

```
      -- DSC MENU --
   All Ships Call
   TX Completed




 ⟨ CLR ⇒ Exit ⟩
```

RECEIVING AN ALL SHIP CALL

1. When a DSC All Ship Call is received, an emergency alarm sounds.

2. The display will show the MMSI of the vessel or coast station transmitting the All Ship Call.

3. Push the **[CLR]** key to stop the alarm sound.

4. Push the **[CHANNEL.ENTER]** to monitor the channel for an announcement from the calling station.

5. Push the **[CLR]** key to ignore the call.

INDIVIDUAL CALL

This feature allows the user to contact another vessel or coast station with a DSC VHF radio and automatically switch the receiving radio to a desired communication channel and ring like a telephone.

INDIVIDUAL CALL – Manual MMSI entry

1. Press the **[MENU]** key. The <DSC MENU> will appear.
2. Rotate **[CHANNEL]** to select <INDIVIDUAL CALL> then push **[CHANNEL.ENTER]**.
3. The transceiver will show the <INDIVIDUAL CALL> menu.
4. Rotate **[CHANNEL]** to select <MANUAL INPUT> then push **[CHANNEL.ENTER]**.
5. Set the 9 digit MMSI number for the individual you wish to call by rotating the **[CHANNEL].**
6. When a digit is set, push **[CHANNEL.ENTER]** to move to move to the next digit to be entered.
7. Repeat the procedure until all nine space of the MMSI number which you want to contact are entered.
8. If a mistake was made entering the MMSI number, repeat pressing the **[DIAL]** or **[16/C]** until the wrong number is selected and then rotate **[CHANNEL]** to correct the entry.
9. When all 9 MMSI digits are entered push the **[CHANNEL.ENTER].**
10. Rotate **[CHANNEL]** to select a desired channel, then push the **[CHANNEL.ENTER]**.
11. The <Individual Call Ready> menu appear.
12. Push the **[CHANNEL.ENTER]** to transmit the individual call.
13. After the Individual Call is transmitted, if a reply signal is not received, <WAITING FOR ACK> is shown on the display which means that the IC-M505 is waiting for the station you called to send an acknowledgment.
14. Push the **[CLR]** key to ignore the waiting for acknowledgement and return to normal operation.

15. When the IC-M505 receives an <ABLE TO COMPLY> acknowledgment from the station you called, the radio will automatically switch to the operating channel selected in step 10 and produce a ringing sound.
16. Press the microphone PTT button and call the other station you desire to communicate with.
17. Push the **[CLR]** key to revert to normal operation mode.

```
-- DSC MENU --
Select Item
   Position Input
 → Individual Call
   Group Call
   All Ships Call
   Position Request
   Position Report
```

```
-- DSC MENU --
Select Address
 → Manual Input
   HUNTER
   TUTOR
   COLIBRI

 ‹ CLR → Exit / ENT → OK ›
```

```
-- DSC MENU --
Input Address
Input 9 digits
 274300___



 ‹ CLR → Exit / ENT → OK ›
```

```
-- DSC MENU --
Select Traffic CH

  72



 ‹ CLR → Exit / ENT → OK ›
```

```
-- DSC MENU --

   Individual Call Ready



 ‹ CLR → Exit  /  ENT → OK ›
```

```
-- DSC MENU --
  Individual  Call
    TX Completed


  Now Waiting for ACK


 ‹ CLR → Exit ›
```

```
25W                    CALL
           TAG          72
Received
Individual ACK ABLE
‹002340010
 CLR → Exit›
                    PORT-OPS
```

INDIVIDUAL CALL – Using Individual Call Directory

This feature allows the user to contact another vessel or coast station with a DSC VHF radio and automatically switch the receiving radio to a desired communication channel and ring like a telephone. The desired party station MMSI ID can be selected from a stored Call Directory instead of manually insert the desired MMSI ID.

1. Press the **[MENU]** key. The <DSC MENU> will appear.

2. Rotate **[CHANNEL]** to select <INDIVIDUAL CALL> then push **[CHANNEL.ENTER]**.

3. The transceiver will show the <INDIVIDUAL CALL> menu.

4. Rotate **[CHANNEL]** to select the pre-programmed individual address then push **[CHANNEL.ENTER]**.

5. Rotate **[CHANNEL]** to select a desired channel, then push the **[CHANNEL.ENTER]**.

6. The <Individual Call Ready> menu appear.

7. Push the **[CHANNEL.ENTER]** to transmit the individual call.

```
        -- DSC MENU --
 Select Item
    Position Input
  → Individual Call
    Group Call
    All Ships Call
    Position Request
    Position Report
```

```
        -- DSC MENU --
 Select Address
    Manual Input
    HUNTER
    TUTOR
  → COLIBRI

      〈 CLR → Exit / ENT → OK 〉
```

```
        -- DSC MENU --
 Select Traffic CH

  77



      〈 CLR → Exit / ENT → OK 〉
```

```
        -- DSC MENU --


    Individual Call Ready



      〈 CLR → Exit  /  ENT → OK 〉
```

```
        -- DSC MENU --
    Individual  Call
     TX Completed

   Now Waiting for ACK


      〈 CLR → Exit 〉
```

RECEIVING AN INDIVIDUAL CALL

When receiving an Individual Call, you can transmit an acknowledgement (<Able to Comply> or <Unable to Comply>) to the calling station using the on screen prompts.

1. When a DSC Individual call is received, a ringing alarm sounds.
2. The display will show the MMSI or name of the vessel transmitting the Individual Call.
3. Push **[CLR]** button once to stop the ringing alarm.
4. Push **[CLR]** button again to ignore the individual call and to revert to normal operation.
5. Push **[CHANNEL.ENTER]** to accept the individual call.
6. Select <ABLE TO COMPLY> or <UNABLE TO COMPLY> by rotating **[CHANNEL]** then press **[CHANNEL.ENTER]** to confirm the selection.
7. The <Individual Ack Ready> menu appear.
8. Push **[CHANNEL.ENTER]** to transmit the individual acknowledgement.
9. When you transmit an <ABLE TO COMPLY> acknowledgment to the party station, the radio will automatically switch to the received operating channel.
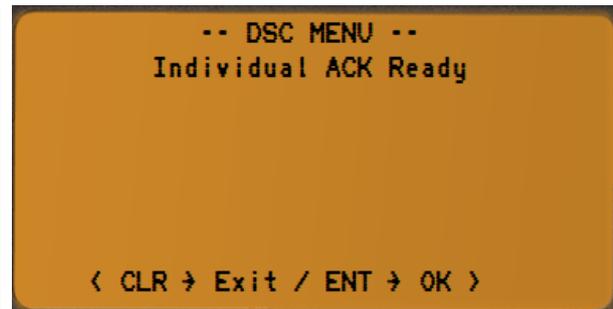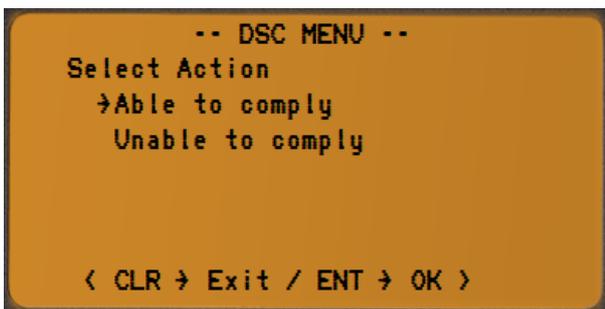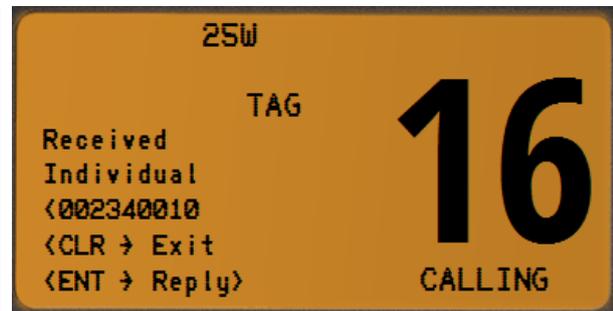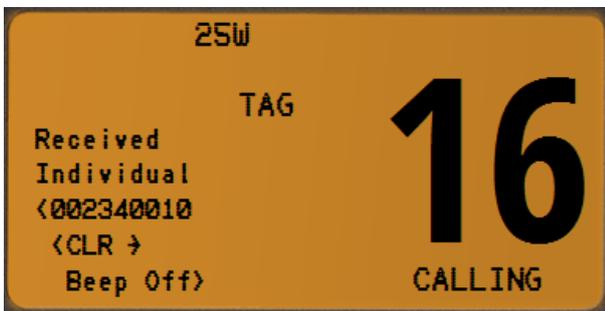
GROUP CALL

This feature allows the user to contact a group of specific vessels (example: members of yacht club) or coast stations with a group MMSI number using the group call function and to automatically switch to a desired channel for voice communications.
This function is very useful for yachts club and vessels traveling together that want to make collectively announcements on a predetermined channel.

Note: usually a GROUP MMSI is not provided by the national or government authority and must be inserted by each group member following a best practice recommended by international rules:

- First digit must be always a zero.
- Next 3 digits must follow the nation's assigned Maritime Identification Digit (MID).
- Following 5 digit may be set as desired but different from any other group in the region.

GROUP CALL – Manual GROUP MMSI entry

1. Push **[MENU]** key. The <DSC MENU> will appear.

2. Rotate **[CHANNEL]** to select <GROUP CALL> then push **[CHANNEL.ENTER]**.

3. The transceiver will show the <GROUP CALL> menu.

4. Rotate **[CHANNEL]** to select <MANUAL INPUT> then push **[CHANNEL.ENTER]**.

5. The first digit is always a fixed "0" indicating that it will be a group MMSI number.

6. Set the other 8 digit MMSI number for the group you wish to call by rotating the **[CHANNEL].**

7. When a digit is set, push **[CHANNEL.ENTER]** to move to move to the next digit to be entered.

8. Repeat the procedure until all eight space of the MMSI number which you want to contact are entered.

9. If a mistake was made entering the MMSI number, repeat pressing the **[DIAL]** or **[16/C]** until the wrong number is selected and then rotate **[CHANNEL]** to correct the entry.

10. When all 8 digits are entered push the **[CHANNEL.ENTER].**

11. Rotate **[CHANNEL]** to select a desired channel, then push the **[CHANNEL.ENTER]**.

12. The <Group Call Ready> menu appear.

13. Push the **[CHANNEL.ENTER]** to transmit the group call.

14. After the Group Call is transmitted, the radio will automatically switch to the operating channel selected in step 11.

15. Listen to the channel to make sure it is not busy, then press the microphone PTT button and transmit the message to the group of stations you desire to communicate with.

16. Push the **[CLR]** key to revert to normal operation mode.

```
-- DSC MENU --
Select Item
   Position Input
   Individual Call
 → Group Call
   All Ships Call
   Position Request
   Position Report
```

```
-- DSC MENU --
Select Address
 → Manual Input
   CRUISING
   RACE1
   CONTROL

< CLR → Exit / ENT → OK >
```

```
-- DSC MENU --
Input Address
Input 8 digits
 0_____



< CLR → Exit / ENT → OK >
```

```
-- DSC MENU --
Input Address
Input 8 digits
 024700001



< CLR → Exit / ENT → OK >
```

```
-- DSC MENU --
Select Traffic CH

 09



< CLR → Exit / ENT → OK >
```

```
-- DSC MENU --

Group Call Ready



< CLR → Exit  /  ENT → OK >
```

```
-- DSC MENU --
   Group  Call
   TX Completed



< CLR → Exit >
```

```
          25W

              TAG
                      09
No Position
No Time
              SHIP-SHIP
```

GROUP CALL – Using Group Call Directory

This feature allows the user to contact a group of vessels or coast stations. The desired GROUP MMSI ID can be selected from a stored Call Directory instead of manually insert the desired GROUP MMSI ID.

1. Push **[MENU]** key. The <DSC MENU> will appear.

2. Rotate **[CHANNEL]** to select <GROUP CALL> then push **[CHANNEL.ENTER]**.

3. The transceiver will show the <GROUP CALL> menu.

4. Rotate **[CHANNEL]** to select the pre-programmed group address then push **[CHANNEL.ENTER]**.

5. Perform steps 11 to 16 described on previous section to call the desired group.

RECEIVING A GROUP CALL

1. When a DSC Group call is received, a ringing alarm sounds.

2. The display will show the MMSI or name of the vessel transmitting the Group Call.

3. Push **[CLR]** to stop the ringing sound.

4. Push **[CLR]** button again to ignore the group call and to revert to normal operation.

5. Push **[CHANNEL.ENTER]** to accept the group call.

6. Monitor the channel for the station calling the group for a message.

7. If you want to respond, monitor the channel to make sure it is clear, then press the microphone PTT button and talk to the calling station.

POSITION REQUEST CALL

This feature allows the user to poll the location of another vessel and show the position of that vessel on the LCD display. This is a great feature for anyone wanting to know the precise position of another vessel, for example a friend's boat you are cruising with.
Note: the other vessel must be equipped with an operating GPS receiver connected to an adequate DSC transceiver and must not have set the transceiver to deny position request!

POSITION REQUEST – Manual MMSI entry

1. Push **[MENU]** key. The <DSC MENU> will appear.

2. Rotate **[CHANNEL]** to select <POSITION REQUEST> then push **[CHANNEL.ENTER]**.

3. Rotate **[CHANNEL]** to select <MANUAL INPUT> then push **[CHANNEL.ENTER]**.

4. Set the 9 digit MMSI number for the vessel you wish to call by rotating the **[CHANNEL].**

5. When a digit is set, push **[CHANNEL.ENTER]** to move to move to the next digit to be entered.

6. Repeat the procedure until all 9 space of the MMSI number which you want to contact are entered.

7. If a mistake was made entering the MMSI number, repeat pressing the **[DIAL]** or **[16/C]** until the wrong number is selected and then rotate **[CHANNEL]** to correct the entry.

8. When all 9 digits are entered push the **[CHANNEL.ENTER].**

9. The <Pos Request Ready> menu appear.

10. Push the **[CHANNEL.ENTER]** to transmit the position request.

11. After the position request call has been transmitted, the radio wait for the acknowledgement from the other station.

12. Push the **[CLR]** key to revert to normal operation mode.

```
        -- DSC MENU --              -- DSC MENU --
   Select Item                 Select Address
      Position Input            → Manual Input
      Individual Call             HUNTER
      Group Call                  TUTOR
      All Ships Call              COLIBRI
    → Position Request
      Position Report           < CLR → Exit / ENT → OK >


        -- DSC MENU --              -- DSC MENU --
   Input Address               Input Address
   Input 9 digits              Input 9 digits
    █_____                   412100031



      < CLR → Exit / ENT → OK >     < CLR → Exit / ENT → OK >


        -- DSC MENU --              -- DSC MENU --
                                  Position Request
      POS Request Ready            TX Completed


                                  Now Waiting for ACK


      < CLR → Exit  /  ENT → OK >     < CLR → Exit >
```
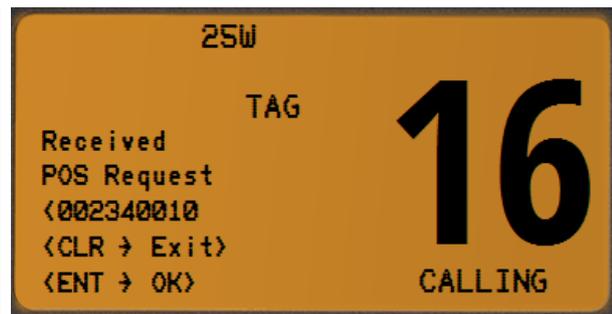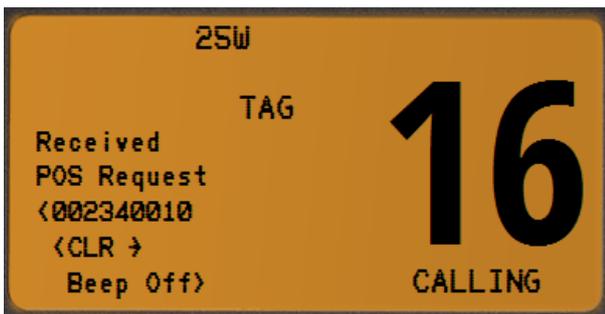
POSITION REQUEST – Using Individual Call Directory

1. Push **[MENU]** key. The <DSC MENU> will appear.

2. Rotate **[CHANNEL]** to select <POSITION REQUEST> then push **[CHANNEL.ENTER]**.

3. Rotate **[CHANNEL]** to select the pre-programmed station address then push **[CHANNEL.ENTER]**.

4. Perform steps 9 to 12 described on previous section to call the desired station.

RECEIVING A POSITION REQUEST CALL

1. When a DSC Position Request call is received, a ringing alarm sounds.

2. The display will show the MMSI or name of the requesting vessel.

3. Push **[CLR]** to stop the ringing sound.

4. Push **[CLR]** button again to ignore the position request call and to revert to normal operation.

5. Push **[CHANNEL.ENTER]** to accept the position request call and to reply your position.

POSITION REPORT CALL

This feature is similar to the position request feature, however instead of requesting a position of another vessel this function allows you to send your position to another vessel. In order to send your position it's necessary to have a GPS receiver connected or to have manually input your position.

POSITION REPORT – Manual MMSI entry

1. Push **[MENU]** key. The <DSC MENU> will appear.
2. Rotate **[CHANNEL]** to select <POSITION REPORT> then push **[CHANNEL.ENTER]**.
3. Rotate **[CHANNEL]** to select <MANUAL INPUT> then push **[CHANNEL.ENTER]**.
4. Set the 9 digit MMSI number for the vessel you wish to call by rotating the **[CHANNEL].**
5. When a digit is set, push **[CHANNEL.ENTER]** to move to move to the next digit to be entered.
6. Repeat the procedure until all 9 space of the MMSI number which you want to contact are entered.
7. If a mistake was made entering the MMSI number, repeat pressing the **[DIAL]** or **[16/C]** until the wrong number is selected and then rotate **[CHANNEL]** to correct the entry.
8. When all 9 digits are entered push the **[CHANNEL.ENTER].**
9. Regardless of a GPS receiver connection, the current position / time information appear.
10. If it's not necessary to input or modify the information, push **[CHANNEL.ENTER]** or **[16/C]** several time to skip the data input steps.
11. Push **[DIAL]** or **[16/C]** several time to move between each position's digit you need to replace.
12. Rotate **[CHANNEL]** to edit N (North Latitude) or S (South Latitude) when cursor is on the N or S position.
13. Rotate **[CHANNEL]** to edit W (West Longitude) or E (East Longitude) when cursor is on the W or E position.
14. Push **[CLR]** for 1 second to clear latitude / longitude data.
15. After setting the position data push **[CHANNEL.ENTER]** to set the UTC time.
16. Push **[DIAL]** or **[16/C]** several time to move between each time digit you need to replace.
17. Push **[CLR]** for 1 second to clear the UTC time data.
18. Set the current UTC time rotating **[CHANNEL]** then push **[CHANNEL.ENTER].**
19. The <Position Report Ready> menu appear.
20. Push the **[CHANNEL.ENTER]** to transmit the position report to the selected station.
21. Push the **[CLR]** key to revert to normal operation mode.

```
      -- DSC MENU --                      -- DSC MENU --
  Select Item                         Select Address
     Position Input                    � Manual Input
     Individual Call                      HUNTER
     Group Call                           TUTOR
     All Ships Call                       COLIBRI
     Position Request
   � Position Report                  ⟨ CLR � Exit / ENT � OK ⟩


      -- DSC MENU --                      -- DSC MENU --
  Input Address                       Input Address
  Input 9 digits                      Input 9 digits
                                       269000315
   _____



   ⟨ CLR � Exit / ENT � OK ⟩       ⟨ CLR � Exit / ENT � OK ⟩


      -- DSC MENU --                      -- DSC MENU --
  Input Position                      Input UTC Time
  Latitude
   29°25.404 N                         13:29
  Longitude
   010°07.106 E
  ⟨ CLR 1sec �  Null Data ⟩          ⟨ CLR 1sec �  Null Data ⟩
  ⟨ CLR � Exit / ENT � OK ⟩        ⟨ CLR � Exit / ENT � OK ⟩


      -- DSC MENU --                      -- DSC MENU --
                                       Position Report
   Position Report Ready                 TX Completed



   ⟨ CLR � Exit  /  ENT � OK ⟩      ⟨ CLR � Exit ⟩
```
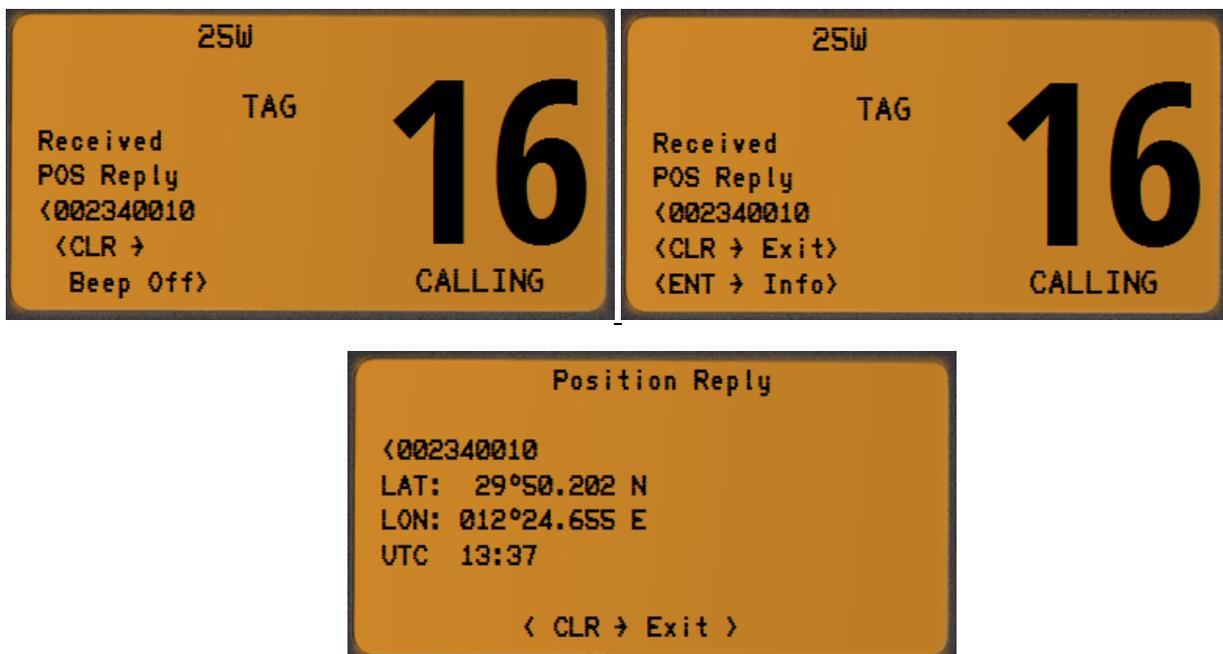
POSITION REPORT – Using Individual Call Directory

1. Push **[MENU]** key. The <DSC MENU> will appear.

2. Rotate **[CHANNEL]** to select <POSITION REPORT> then push **[CHANNEL.ENTER]**.

3. Rotate **[CHANNEL]** to select the pre-programmed station address then push **[CHANNEL.ENTER]**.

4. Perform steps 9 to 21 described on previous section to transmit your position to desired station.

RECEIVING A POSITION REPORT CALL

1. When a DSC Position Report call is received, a ringing alarm sounds.

2. The display will show the MMSI or name of the report vessel.

3. Push **[CLR]** to stop the ringing sound.

4. Push **[CLR]** again to ignore the position report call and to revert to normal operation.

5. Push **[CHANNEL.ENTER]** to show the position report call data of the other vessel.
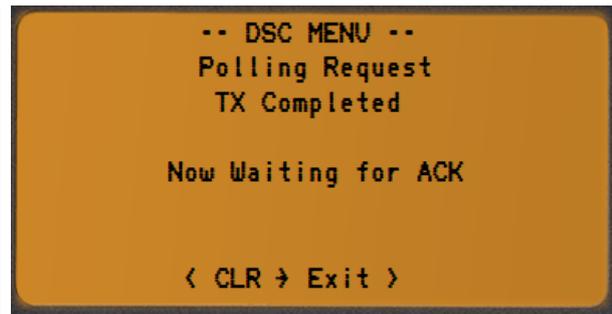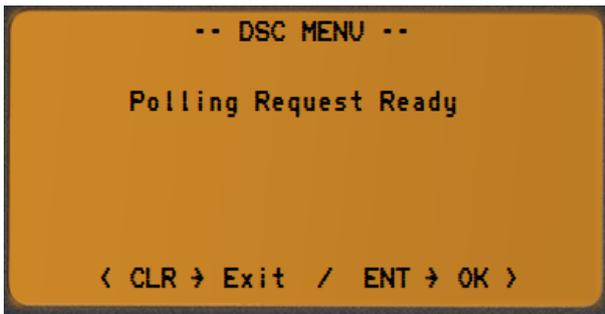6. Push **[CLR]** to resume normal operation.

POLLING CALL

The IC-M505 has the capability of DSC POLLING REQUEST.

POLLING REQUEST – Manual MMSI entry

1. Push **[MENU]** key. The <DSC MENU> will appear.
2. Rotate **[CHANNEL]** to select <POLLING REQUEST> then push **[CHANNEL.ENTER]**.
3. Rotate **[CHANNEL]** to select <MANUAL INPUT> then push **[CHANNEL.ENTER]**.
4. Set the 9 digit MMSI number for the vessel you wish to call by rotating the **[CHANNEL].**
5. When a digit is set, push **[CHANNEL.ENTER]** to move to move to the next digit to be entered.
6. Repeat the procedure until all 9 space of the MMSI number which you want to contact are entered.
7. If a mistake was made entering the MMSI number, repeat pressing the **[DIAL]** or **[16/C]** until the wrong number is selected and then rotate **[CHANNEL]** to correct the entry.
8. When all 9 digits are entered push the **[CHANNEL.ENTER].**
9. The <Polling Request Ready> menu appear.
10. Push the **[CHANNEL.ENTER]** to transmit the polling request.
11. After the polling request call has been transmitted, the radio wait for the acknowledgement from the other station.
12. Push the **[CLR]** key to revert to normal operation mode.

```
-- DSC MENU --                      -- DSC MENU --
                                    Polling Request
Polling Request Ready                 TX Completed

                                    Now Waiting for ACK



< CLR → Exit  /  ENT → OK >          < CLR → Exit >
```

POLLING – Using Individual Call Directory

1. Push **[MENU]** key. The <DSC MENU> will appear.

2. Rotate **[CHANNEL]** to select <POLLING REQUEST> then push **[CHANNEL.ENTER]**.

3. Rotate **[CHANNEL]** to select the pre-programmed station address then push **[CHANNEL.ENTER]**.

4. Perform steps 9 to 21 described on previous section to transmit polling request to desired station.

RECEIVING A POLLING CALL

1. When a DSC Polling Request call is received, a ringing alarm sounds.

2. The display will show the MMSI or name of the requesting vessel.

3. Push **[CLR]** to stop the ringing sound.

4. Push **[CLR]** again to ignore the polling report call and to revert to normal operation.

5. Push **[CHANNEL.ENTER]** to accept the polling request call and to reply to the other vessel.

6. Push **[CLR]** to resume normal operation.

MANUAL POSITION AND TIME PROGRAMMING

You may send the Latitude/Longitude of your vessel manually when a GPS receiver is not connected or is not functioning. After a position is entered, transmitting a DSC Distress or position report will contain the manually entered position.

1. Push **[MENU]** key. The <DSC MENU> will appear.

2. Rotate **[CHANNEL]** to select <POSITION INPUT> then push **[CHANNEL.ENTER]**.

3. Regardless of a GPS receiver connection, the current position / time information appears.

4. Set your position by rotating **[CHANNEL]** and push **[CHANNEL.ENTER]** to move to next digit.

5. If it's not necessary to input or modify the information, push **[CHANNEL.ENTER]** or **[16/C]** several time to skip the data input steps.

6. Push **[DIAL]** or **[16/C]** several time to move cursor backward or forward, respectively.

7. Rotate **[CHANNEL]** to edit N (North Latitude) or S (South Latitude) when cursor is on the N or S position.

8. Rotate **[CHANNEL]** to edit W (West Longitude) or E (East Longitude) when cursor is on the W or E position.

9. Push **[CLR]** for 1 second to clear latitude / longitude data.

10. After setting the position data push **[CHANNEL.ENTER]** to set the UTC time.

11. Push **[DIAL]** or **[16/C]** several time to move between each time digit you need to replace.

12. Push **[CLR]** for 1 second to clear the UTC time data.

13. Set the current UTC time rotating **[CHANNEL]** then push **[CHANNEL.ENTER].**

```
        -- DSC MENU --
  Select Item
  → Position Input
    Individual Call
    Group Call
    All Ships Call
    Position Request
    Position Report
```

```
        -- DSC MENU --
  Input Position
  Latitude
   29°25.404 N
  Longitude
   010°07.106 E
  ⟨ CLR 1sec →  Null Data ⟩
  ⟨ CLR → Exit / ENT → OK ⟩
```

```
        -- DSC MENU --
  Input UTC Time

   14:00



  ⟨ CLR 1sec →  Null Data ⟩
  ⟨ CLR → Exit / ENT → OK ⟩
```

RECEIVED MESSAGES

The IC-M505 automatically store up to 10 distress messages and 10 other messages as an assistance to the vessel's logbook.

1. Push **[MENU]** key. The <DSC MENU> will appear.

2. Rotate **[CHANNEL]** to select <RECEIVED CALL> then push **[CHANNEL.ENTER]**.

3. The <Select Message> menu appears.

4. Rotate **[CHANNEL]** to select desired message's category and push **[CHANNEL.ENTER]**.

5. Rotate **[CHANNEL]** to select desired message and push **[CHANNEL.ENTER]**.

6. Rotate **[CHANNEL]** to scroll the entire message.

7. Push **[CLR]** to go back one step in to the menu.

8. Push **[CHANNEL.ENTER]** to revert the radio to normal operation.

```
        -- DSC MENU --
  Select Item
     Group Call
     All Ships Call
     Position Request
     Position Report
     Polling Request
   ⇂ Received Call
```

```
        -- DSC MENU --
  Select Message
   ⇂ Distress
     Other



     ⟨ CLR ⇂ Exit / ENT ⇂ OK ⟩
```

```
        -- DSC MENU --
  Select Message
   ⇂ 1: Distress        14:24
     2: Distress        14:23
     3: Distress        14:23


     ⟨ CLR ⇂ Exit  /  ENT ⇂ OK ⟩
```

```
        -- DSC MENU --
  Select Message
     1: Distress        14:24
   ⇂ 2: Distress        14:23
     3: Distress        14:23


     ⟨ CLR ⇂ Exit  /  ENT ⇂ OK ⟩
```

```
        -- DSC MENU --

  ⟨ 269070002
     COLLISION
     Lat:  29°00.528N
     Lon: 012°00.571E

     ⟨ CLR ⇂ Exit / ENT ⇂ OK ⟩
```

```
        -- DSC MENU --

     COLLISION
     Lat:  29°00.528N
     Lon: 012°00.571E
     UTC:  14:23

     ⟨ CLR ⇂ Exit / ENT ⇂ OK ⟩
```

```
        -- DSC MENU --
Select Message
    Distress
→  Other




    < CLR → Exit / ENT → OK >
```

```
        -- DSC MENU --
Select Message
→  1: All Ships Call
    2: Group Call
    3: All Ships Call
    4: Polling Request
    5: Polling Request
    < CLR → Exit  /  ENT → OK >
```

```
        -- DSC MENU --
Select Message
    1: All Ships Call
    2: Group Call
→  3: All Ships Call
    4: Polling Request
    5: Polling Request
    < CLR → Exit  /  ENT → OK >
```

```
        -- DSC MENU --

All Ships Call
< 002340010
    F3E SIMPLEX
    CH 16

    < CLR → Exit / ENT → OK >
```

VOICE CALLING PROCEDURES

DISTRESS CALL

1. Transmit a DSC Distress Alert, containing if possible the nature of distress and your position.
2. Wait briefly (30 sec) for a Distress Acknowledgment, usually from a CRS or MRCC.
3. Transmit a Distress Call, on CH-16 using voice radiotelephony.
4. Transmit a Distress Message, on CH-16 using voice radiotelephony.

Voice Distress Call:

- Mayday   (3x)
- This is
- Vessel Name   (3x)
- Vessel Call Sign
- MMSI

Voice Distress Message:

- Mayday
- Vessel Name
- Vessel Call Sign
- MMSI
- Last know position (LAT/LON) or relative to any geographical reference.
- Time of validity of the position.
- Nature of distress.
- Requested help.
- Other useful information that may help rescue operation.
- OVER

Example:

> MAYDAY MAYDAY MAYDAY
> THIS IS
> YACHT HOLIDAY HOLIDAY HOLIDAY
> HBY5824 269235000
>
> MAYDAY
> YACHT HOLIDAY
> HBY5824 269235000
> POSITION 43 DEGREES 15 MINUTES NORTH
> 006 DEGREES 28 MINUTES EAST
> AT 0845 UTC
> THE SHIP IS SINKING
> IMMEDIATE ASSISTANCE IS REQUIRED
> THE SHIP IS A 46 FEET SAILING YACHT SLOOP DARK BLUE HULL
> 6 PERSONS ON BOARD
> LAST COURSE 170 DEGREES SPEED FIVE KNOTS
> OVER

DISTRESS ACKNOWLEDGEMENT CALL

The international Radio Regulations RR state that usually a DSC Distress Acknowledgment shall be transmitted only by a Coast station or by a MRCC.

If a vessel receive a DSC Distress Call and / or a voice Distress Call shall:

- Listen on the distress channel for the Distress Traffic and take note of the content.
- If after 5 minutes, no Distress Acknowledgment has been transmitted by a SRC or MRCC, proceed with a Distress Acknowledgement using voice radiotelephony.
- Try to contact a CRS or MRCC with any method to inform them about situation.

Voice Distress Acknowledgment:

- MAYDAY
- NAME OF THE DISTRESS VESSEL   or;
- MMSI   or;
- ANY OTHER DISTRESSED VESSEL IDENTIFICATION
- THIS IS VESSEL NAME
- CALL SIGN
- MMSI
- RECEIVED MAYDAY

Example:

    MAYDAY
    YACHT HOLIDAY
    THIS IS YACHT LUCKY
    HBY4247
    269285000
    RECEIVED MAYDAY

DISTRESS CALL RELAY

Distress Call relay to a land station

This is only broadcasted when a station learns that:

- Another vessel has transmitted a DSC Distress Call that is not confirmed by any station after 5 minutes; or
- Another vessel is in Distress and is unable to transmit the Distress Alert itself, (example: direct visual observation) and in opinion of the master further help is required.

Usually the VHF DSC radio installed on pleasure or small vessels, can't transmit a DSC Distress Alert Relay because the <Class D> DSC controller are not equipped with this function. The pleasure craft is then required to relay the distress call directly to a land station (CRS or MRCC) on an appropriate monitored working channel using Voice Radiotelephony.

- MAYDAY RELAY   (3x)
- NAME OF CALLED STATION   (3x)
- THIS IS
- VESSEL NAME   (3x)
- CALL SIGN
- OVER

Example:

> MAYDAY RELAY MAYDAY RELAY MAYDAY RELAY
> BREMEN RESCUE BREMEN RESCUE BREMEN RESCUE
> THIS IS
> YACHT DOLPHIN DOLPHIN DOLPHIN HBY 3585
> OVER
>
> *When Bremen Rescue answer the call and request to continue with the <Go Ahead>:*
>
> BREMEN RESCUE THIS IS SAILING YACHT DOLPHIN HBY 3585
> POSITION 28 DEGREES 12 MINUTES NORTH 030 DEGREES 15 MINUTES EAST AT
> 0645 UTC
> WE OBSERVED AN UNIDENTIFIED TRAWLER SINKING ABOUT 3 NAUTICAL MILES
> SOUTHEAST OF OUR REPORTED POSITION WE ARE HEADING TO THE TRAWLER
> WE REQUEST IMMEDIATE ADDITIONAL ASSISTANCE FROM ASHORE AND OTHER
> SHIPS IN VICINITY
> OVER

Distress Call relay to All Stations

In case no land station (CRS or MRCC) can be directly contacted and alarmed, the master may transmit a Distress Call Relay to All Stations using Voice Radiotelephony on CH-16.

- MAYDAY RELAY   (3x)
- ALL STATIONS   (3x)
- THIS IS
- VESSEL NAME   (3x)
- CALL SIGN
- WE RECEIVED FOLLOWING DISTRESS MESSAGE
- AT ….. UTC   ON CHANNEL …..
- OVER

Example:

> MAYDAY RELAY MAYDAY RELAY MAYDAY RELAY
> ALL STATIONS ALL STATIONS ALL STATIONS
> THIS IS
> YACHT DOLPHIN DOLPHIN DOLPHIN HBY3585
> WE RECEIVED THE FOLLOWING DISTRESS MESSAGE AT 0700 UTC ON CHANNEL 16
> MAYDAY YACHT HOLIDAY HBY5824 269235000
> POSITION 43 DEGREES 15 MINUTES NORTH 006 DEGREES 28 MINUTES EAST
> AT 0645 UTC
> THE SHIP IS SINKING
> IMMEDIATE ASSISTANCE IS REQUIRED
> THE SHIP IS A 46 FEET SAILING YACHT SLOOP DARK BLUE HULL
> 6 PERSONS ON BOARD LAST COURSE 170 SPEED FIVE KNOTS
> OVER

CANCELLING A FALSE DISTRESS CALL

If a vessel transmit a false DSC Distress Call, this should be immediately cancelled !

- If the <CANCEL> function is available on the radio, this should be used as soon as possible.
- Power cycle the radio OFF and ON to stop the automatic alarm re-trasmission.
- Transmit the Distress Cancel message on the CH-16.

Voice Distress Cancel Message:

- ALL STATIONS   (3x)
- THIS IS
- VESSEL NAME   (3x)
- CALL SIGN
- MMSI
- PLEASE CANCEL MY DISTRESS ALERT OF ……. UTC
- OVER

Example:

> ALL STATIONS ALL STATIONS ALL STATIONS
> THIS IS
> SAILING YACHT TROUBLE TROUBLE TROUBLE
> HBY2854 269432000
> PLEASE CANCEL MY DISTRESS ALERT OF 0700 UTC
> OVER

URGENCY CALL

- There is no DSC Acknowledgment for a DSC Urgency Call transmitted to All SHIPS.
- Transmit the Urgency Call and Message using Voice Radiotelephony on CH-16.
- If CH-16 is being used for a Distress Traffic, the Urgency Call and Message must be delayed until the Distress Traffic is over or must be addressed directly to a CRS or MRCC using a working channel of the land station.

Voice Urgency Message:

- PAN PAN   (3x)
- ALL STATIONS   (3x)
- THIS IS
- VESSEL NAME   (3x)
- CALL SIGN
- MMSI
- LAST KNOW POSITION (LAT/LON) OR ANY GEOGRAPHICAL REFERENCE.
- TIME OF VALIDITY OF THE POSITION.
- URGENCY MESSAGE.
- OVER

Example:

PAN PAN   PAN PAN   PAN PAN
ALL STATIONS ALL STATIONS ALL STATIONS
THIS IS
SAILING YACHT DOLPHIN DOLPHIN DOLPHIN
HBY2854 269432000
POSITION 43 DEGREES 15 MINUTES NORTH 006 DEGREES 28 MINUTES EAST
AT 0845 UTC
OUR RUDDER IS BROKEN AND WE ARE DRIFTING SLOWLY IN TO DANGER
WE NEED TOWING ASSISTANCE
OVER

CANCELLING AN URGENCY CALL

When an urgency announcement or call and message was transmitted to more than one station and action is no longer required, an urgency cancellation should be sent by the station responsible for its transmission, using voice radiotelephony.

Voice Urgency Cancel Message:

- PAN PAN   (3x)
- ALL STATIONS   (3x)
- THIS IS
- VESSEL NAME   (3x)
- CALL SIGN
- MMSI
- URGENCY CANCELLATION MESSAGE.
- OVER

Example:

> PAN PAN   PAN PAN   PAN PAN
> ALL STATIONS ALL STATIONS ALL STATIONS
> THIS IS
> SAILING YACHT DOLPHIN DOLPHIN DOLPHIN
> HBY2854 269432000
> PLEASE CANCEL MY URGENCY MESSAGE OF 0725 UTC
> OVER

SAFETY CALL

- There is no DSC Acknowledgment for a DSC Safety Call transmitted to All SHIPS.
- Transmit the Safety Call and Message using Voice Radiotelephony on CH-16.
- If CH-16 is being used for a Distress or Urgency Traffic, the Safety Call and Message must be delayed until the Distress Traffic is over or must be addressed directly to a CRS or MRCC using a working channel of the land station.

Voice Safety Message:

- SECURITE   (3x)
- ALL STATIONS   (3x)
- THIS IS
- VESSEL NAME   (3x)
- CALL SIGN
- MMSI
- LAST KNOW POSITION (LAT/LON) OR ANY GEOGRAPHICAL REFERENCE.
- TIME OF VALIDITY OF THE POSITION.
- SAFETY MESSAGE.
- OVER

Example:

SECURITE SECURITE SECURITE
ALL STATIONS ALL STATIONS ALL STATIONS
THIS IS
SAILING YACHT DOLPHIN DOLPHIN DOLPHIN
HBY2854 269432000
3 NAUTICAL MILES SOUTH OF CAPE FANTASY
WE OBSERVED A DRIFTING YELLOW CONTAINER DANGEROUS FOR NAVIGATION
SHIPS IN VICINITY PLEASE NAVIGATE CAREFULLY
OVER