ICOM

INSTRUCTION MANUAL

VHF MARINE TRANSCEIVER

IC-M411

Icom Inc.

Manual abstract:

CAUTION NOTE Equpment damage may occur. Recommended for optmum use. No rsk of personal njury, fire or electrc shock. D FEATURES m Advanced receiver performance m Easy to hear speaker m Built-in DSC meets Class D requirement m Rugged waterproof construction m Favorite channel function m AquaQuake water draining function Icom, Icom Inc. and the logo are regstered trademarks of Icom Incorporated (Japan) n the Unted States, the Unted Kngdom, Germany, France, Span, Russa and/or other countres. CLEAN THE TRANSCEIVER AND MICROPHONE THOROUGHLY WITH FRESH WATER after exposure to water ncludng salt water, otherwse, the keys and swtches may become noperable due to salt crystallzaton. IN CASE OF EMERGENCY If your vessel requres assstance, contact other vessels and the Coast Guard by sendng a Dstress call on Channel 16. INSTALLATION NOTE The nstallaton of ths equpment should be made n such a manner as to respect the EC recommended electromagnetc field exposure lmts (1999/519/EC). The maxmum RF power avalable from ths devce s 25 watts. The antenna should be nstalled as hgh as possble for maxmum effcency and that ths nstallaton heght should be at least 5 meters above ground (or accessble) level.

In the case where an antenna cannot be nstalled at a reasonable heght, then the transmtter should nether be contnuously operated for long perods f any person s wthn 5 meters of the antenna, nor operated at all f any person s touchng the antenna. @@@@@@Smlarly some types of transmtter, SSB, CW, AM, etc. @@"MAYDAY MAYDAY MAYDAY." 2. "THIS IS .

.....

....." (name of vessel) 3.

Your call sgn or other ndcaton of the vessel (AND 9-dgt DSC ID f you have one). 4. "LOCATED AT .....

.....

.." (your poston) 5. The nature of the dstress and assstance requred. 6.

Any other nformaton whch mght facltate the rescue. Or, transmt your Dstress call usng dgtal selectve callng on Channel 70. 1. W h l e l f t n g u p t h e key c ove r, p u s h a n d h o l d [DISTRESS] for 5 sec. untl you hear 5 short beeps change to one long beep. 2. Wat for an acknowledgment on Channel 70 from a coast staton. · After the acknowledgement s receved, Channel 16 s automatcally selected. 3. Push and hold [PTT], then transmt the approprate nformaton as lsted above.

USING DIGITAL SELECTIVE CALLING (Ch 70) DISTRESS CALL PROCEDURE DOC CE versons of the IC-M411 whch dsplay the "CE" symbol on the seral number seal, comply wth the essental requrements of the European Rado and Telecommuncaton Termnal Drectve 1999/5/EC. Ths warnng symbol ndcates that ths equpment operates n non-harmonsed frequency bands and/or may be subject to lcensng condtons n the country of use. Be sure to check that you have the correct verson of ths rado or the correct programmng of ths rado, to comply wth natonal lcensng requrement. DECLARATION OF CONFORMITY We Icom Inc. Japan 1-1-32, Kamiminami, Hirano-ku Osaka 547-0003, Japan · List of Country codes (ISO 3166-1) Country 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 Austra Belgum Bulgara Croata Czech Republc Cyprus Denmark Estona Fnland France Germany Greece Hungary Iceland Ireland Italy Latva Codes AT BE BG HR CZ CY DK EE FI FR DE GR HU IS IE IT LV 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 Country Lechtensten Lthuana Luxembourg Malta Netherlands Norway Poland Portugal Romana Slovaka Slovena Span Sweden Swtzerland Turkey Unted Kngdom Codes LI LT LU MT NL NO PL PT RO SK SI ES SE CH TR GB Declare on our sole responsibility that this equipment complies with the essential requirements of the Radio and Telecommunications Terminal Equipment Directive, 1999/5/EC, and that any applicable Essential Test Suite measurements have been performed. Kind of equipment: Type-designation: VHF MARINE TRANSCEIVER 0560 26th Sep. 2007 Place and date of issue iM411 Authorized representative name Version (where applicable): This compliances is based on conformity with the following harmonised standards, specifications or documents: i) EN 301 025-2 V1.2.1 (2004-09) ii) EN 301 025-3 V1.2.

1 (2004-09) iii) EN 60945 2002 iv) EN 60950-1 2001 v) EN 300 698-2 V1.1.1 (2000-08) vi) EN 300 698-3 V1.1.1 (2001-05) Signature TABLE OF CONTENTS FOREWORD .

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..... IMPORTANT .

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....53 v PRECAUTIONS RWARNING! NEVER connect the transcever to an AC outlet. Ths may pose a fire hazard or result n an electrc shock. BE CAREFUL! The transcever rear panel wll become hot when operatng contnuously for long perods. Place the transcever n a secure place to avod nadvertent use by chldren. NEVER connect the transcever to a power source of more than 16 V DC or use reverse polarty. Ths wll run the transcever.

NEVER cut the DC power cable between the DC plug at the back of the transcever and fuse holder. If an ncorrect connecton s made after cuttng, the transcever may be damaged. BE CAREFUL! The transcever employs waterproof constructon, whch corresponds to IPX7 of the nternatonal standard IEC 60529 (2001). However, once the transcever has been dropped, waterproofing cannot be guaranteed due to the fact that the case may be cracked, or the waterproof seal damaged, etc. Icom optonal equpment s desgned for optmal performance when used wth ths transcever.

We are not responsble for the transcever beng damaged or any accdent caused when usng non-Icom optonal equpment. NEVER place the transcever where normal operaton of the vessel may be hndered or where t could cause bodly njury. KEEP the transcever at least 1 m away from the shp's navgaton compass. DO NOT use or place the transcever n areas wth temperatures below 20°C or above +60°C or, n areas subject to drect sunlght, such as the dashboard. AVOID the use of chemcal agents such as benzne or alcohol when cleanng, as they may damage the transcever surfaces.

If the transcever becomes dusty or drty, wpe t clean wth a soft, dry cloth.

v OPERATING RULES D PRIORITIES · Read all rules and regulatons pertanng to prortes and keep an up-to-date copy handy. Safety and Dstress calls take prorty over all others. · You must montor Channel 16 when you are not operatng on another channel. · False or fraudulent dstress sgnals are prohbted and punshable by law. 1 1 (2) OPERATOR'S LICENSE A Restrcted Radotelephone Operator Permt s the lcense most often held by small vessel rado operators when a rado s not requred for safety purposes. The Restrcted Radotelephone Operator Permt must be posted or kept wth the operator. Only a lcensed rado operator may operate a transcever. However, non-lcensed ndvduals may talk over a transcever f a lcensed operator starts, supervses, ends the call and makes the necessary log entr. (p.

8) "DSC" appears when DSC channel group s n use; "ATIS" appears when ATIS channel group s n use. (p. 6) "SCAN 16" appears durng Prorty scan; "SCAN" appears durng Normal scan. (p. 11) "DW 16" appears durng Dualwatch; "TW 16" appears durng Tr-watch. (p. 12) In Set mode, ndcates and scrolls the selected tem. (p. 39) w TAG CHANNEL INDICATOR (p. 11) Appears when a TAG channel s selected.
e DUPLEX INDICATOR (p. 6) Appears when a duplex channel s selected. r LOW BATTERY INDICATOR Appears when the battery voltage drops to approx. 10 V DC or below. 4 y GPS INDICATOR Appears whle vald poston data s receved.
Blnks when nvald poston data s receved. Dsappears when no GPS recever s connected. u CHANNEL NUMBER READOUT Indcates the selected operatng channel number. · &qu channel group. (p.
6) r Push [Y] or [Z] to select the desred channel. (pgs. 5, 6, 50) · When recevng a sgnal, " " appears and audo s emtted from the speaker. · Further adjustment of [VOL] may be necessary. IMPORTANT: To maxmze the readablty of your transmtted sgnal, pause a few sec. after pushng [PTT], hold the mcrophone 5 to 10 cm from your mouth and speak at a normal voce level. q yu M 3 er w r t t ush [HI/LO] on the mcrophone to select the output P power f necessary. · "LOW" appears when low power s selected. · Choose low power for short range communcatons, choose hgh power for longer dstance communcatons. · Some channels are for low power only.

M: Microphone y Push and hold [PTT] to transmt, then speak nto the mcrophone. ·" " appears. · Channel 70 cannot be used for transmsson other than DSC. 4 NOTE for TOT (Time-out Timer) function The TOT functon nhbts contnuous transmsson over a preset tme perod after the transmsson starts. A beep sounds 10 sec. before the TOT functon actvates, to ndcate the transmsson wll be shut down and "TOT" appears on the channel comment ndcator. Transmsson s not possble for 10 sec. after ths transmsson shut down. u Release [PTT] to receve. 7 3 BASIC OPERATION n Call channel programming You can program the call channel wth your most often-used channels n each channel group for quck recall.
q Push both [Y] and [Z] on the transcever one or more tmes to select the desred channel group (INT, USA, ATIS or DSC) to be programmed. w Push and hold [16·C] for 1 sec. to select the call channel of the selected channel group. · "CALL" and call channel number appear. n Channel comments Memory channels can be labeled wth alphanumerc comments of up to 10 characters each for easy channel recognton.
Comment s ndcated at the channel comment ndcator for about 10 sec. after the channel selecton, and the comment, more than 7 characters long, automatcally scrolls. Captal letters, small letters (except f, j, k, p, s, v, x, z), 0 to 9, some symbols (= M + . /) and space can be used. q Select the desred channel.
· Cancel Dualwatch, Tr-watch or Scan n advance. e Push and hold [16·C] agan for 3 sec. (untl a long beep changes to 2 short beeps) to enter the call channel programmng condton. · Channel number starts blnkng. w Whle pushng [CH·DUAL], push [16·C] to edt the channel comment. · A cursor and the first character start blnkng alternately. r Push [Y] or [Z] to select the desred channel. t Push [16·C] to program the dsplayed channel as the call channel. · Push [CLR] to cancel. · The channel number stops blnkng.

e Select the desred character by pushng [Y] or [Z]. · Push [CH·DUAL] or [16·C] to move the cursor forward or backward, respectvely. r Repeat step e to nput all characters. t Push [ENT] to nput and set the comment. y Repeat steps q to t to program other channel comments, f desred. · Push [CLR] to cancel and ext the condton. · The cursor and the character stop blnkng. 8 BASIC OPERATION 3 n Microphone Lock function The Mcrophone Lock functon electrcally locks [Y]/[Z] on the suppled mcrophone. Ths prevents accdental channel changes and functon access. Whle pushng [HI/LO] on the mcrophone, turn power ON to toggle the Mcrophone Lock functon ON and OFF.
n AquaQuake water draining function The IC-M411 uses a technology to clear water away from the speaker grll: AquaQuake. AquaQuake helps dran water away from the speaker housng (water that mght otherwse muffle the sound comng from the speaker). The IC-M411 emts a vbratng nose when ths functon s beng used. Whle pushng and holdng both [Y] and [Z] on the transcever, turn power ON. 3 [Y]/[Z] [HI/LO] · A low beep tone sounds whle [Y] and [Z] keys are pushed and held to dran water, regardless of [VOL] control settng.
· The transcever never accepts a key operaton whle the Aqua- Quake functon s actvated. n Display backlight The functon dsplay and keys can be backlt for better vsblty under low lght condtons. Dsplay backlght s also adjustable va the Set mode. (p. 41) Whle pushng [SCAN·TAG], push [Y] or [Z] to adjust the brghtness of the LCD and key backlght.
· The backlght s adjustable n 4 levels and OFF. 9 4 SCAN OPERATION n Scan types Scannng s an efficent way to locate sgnals quckly over a wde frequency range. The transcever has Prorty scan and Normal scan. Set the TAG channels (scanned channel) before scannng. Clear the TAG channels whch nconvenently stop scannng, such as those for dgtal communcaton use. (Refer to rght page for detals.) Choose Prorty or Normal scan n Set mode. (p. 40) PRIORITY SCAN CH 01 CH 02 NORMAL SCAN CH 01 CH 02 CH 06 CH 16 CH 03 CH 06 CH 03 CH 05 CH 04 CH 05 CH 04 Prorty scan searches through all TAG channels n sequence whle montorng Channel 16. When a sgnal s detected on Channel 16, scan pauses untl the sgnal dsappears; when a sgnal s detected on a channel other than Channel 16, scan becomes Dualwatch untl the sgnal dsappears.

Normal scan, lke Prorty scan, searches through all TAG channels n sequence. However, unlke Prorty scan, Channel 16 s not checked unless Channel 16 s set as a TAG channel.

10 SCAN OPERATION 4 n Setting TAG channels For more effcent scannng, add the desred channels as TAG channels or clear the TAG for unwanted channels. Channels that are not tagged wll be skpped durng scannng. TAG channels can be assgned to each channel group (INT, USA, ATIS or DSC) ndependently. q Push both [Y] and [Z] to select the desred channel group, f desred. w Select the desred channel to be set as a TAG channel. e Push and hold [SCAN·TAG] for 1 sec. to set the dsplayed channel as a TAG channel. ·" ·" " appears n the dsplay.
" dsappears. n Starting a scan Set scan type (Prorty or Normal scan) and scan resume tmer n advance, usng Set mode. (p. 40) q Push both [Y] and [Z] to select the desred channel group, f desred. w TAG channels as descrbed at left.
Set e Make sure the squelch s closed to start a scan. r Push [SCAN·TAG] to start Prorty or Normal scan. · "SCAN" blnks at the channel comment ndcator durng scannng. (Durng Prorty scan, "16" appears besde the blnkng "SCAN" ndcaton.) · A beep tone sounds and "16" blnks at the channel comment ndcator when a sgnal s receved on Channel 16 durng Prorty scan.
· When a sgnal s detected, scan pauses untl the sgnal dsappears or resumes after pausng 5 sec. accordng to Set mode settng. (Channel 16 s stll montored durng Prorty scan.) · Push [Y] or [Z] to check the scannng TAG channels, to change the scannng drecton or resume the scan manually. 4 r cancel the TAG channel settng, repeat step e. To Clearing (or setting) all tagged channels Whle pushng [HI/LO] on the mcrophone, push and hold [SCAN·TAG] for 3 sec. (untl a long beep changes to 2 short beeps) to clear all TAG channels n the channel group. · Repeat above procedure to set all TAG channels. t stop the scan, repeat step r. To Blinks Blinks [Example]: Starting a Normal scan.

Push Scan starts. When a signal is Appears received. 11 5 DUALWATCH/TRI-WATCH n Operation q Select Dualwatch or Tr-watch n Set mode. (p. 40) w Push [Y] or [Z] to select the desred channel. e Push and hold [CH·DUAL] for 1 sec. to start Dualwatch or Tr-watch. · "DW" blnks durng Dualwatch; "TW" blnks durng Tr-watch. · A beep tone sounds and "16" blnks when a sgnal s receved on Channel 16. n Description Dualwatch montors Channel 16 whle you are recevng on another channel; Tr-watch montors Channel 16 and the call channel whle recevng another channel.
Dualwatch/Trwatch s convenent for montorng Channel 16 when you are operatng on another channel. @@@@@@@@@@@@This code programming can be performed only once. @@@@w After the dsplay appears, release [MENU]. e Push [MENU] to enter the DSC menu. @@@@P i ush [ENT] to set the code.
· Returns to the normal operaton. · Push [CLR] to cancel and ext the condton. · If the dfferent code s nput, "INCORRECT" appears. @@ ush [MENU] for 1 sec. to dsplay the 9-dgt MMSI (DSC P self ID) code.
· The MMSI code s dsplayed and scrolls at the channel comment ndcator. · When no MMSI code s programmed, "NO MMSI" appears and warnng alarm sounds. t Input the specfied MMSI code by pushng [Y] or [Z]. · Push [CH·DUAL] or [16·C] to move the cursor forward or backward, respectvely. Scrolls y After nputtng the 9-dgt MMSI code, push [ENT]. · "CONFIRMATION" scrolls at the channel comment ndcator. Scrolls 13 6 DSC OPERATION n DSC address ID A total of 100 DSC address IDs (9-dgt) can be programmed and named wth up to 10 characters. t Push [Y] or [Z] to set up to a 10-character ID name. · Push [CH·DUAL] or [16·C] to move the cursor forward or backward, respectvely. · Push [CLR] to cancel and ext the condton.

D Programming Address ID q Push [MENU] to enter the DSC menu. @@@@@@@@@· Push [CLR] to cancel and ext the condton.
@@@@@@@@They are ncluded automatcally when a GPS recever (NMEA0183 ver. 2.0 or 3.01) s connected. q Push [MENU] to enter the DSC menu.
@@@@@@Set your lattude data usng [s] or [t]. @@@@@@Manually programmed poston data wll be held for 23.5 hours only.
@@@@A NMEA0183 ver. @@Ask your dealer about sutable GPS recevers. @@@@@@@w Whle lftng up the key cover, push and hold [DISTRESS] for 3 sec. @@· Whle pushng and holdng [DISTRESS], the key backlghtng s blnkng. Scrolls · When the connected GPS recever s compatble wth several sentence formatters, the order of nput precedence s `RMC,' `GGA,' `GNS' and `GLL.
' · "GPS" blnks when the GPS data s nvald. Scrolls e After transmttng the Dstress call, the transcever wats for an acknowledgment call on Ch16. · The Dstress call s automatcally transmtted every 3.5 to 4.5 mnutes.
· "DSC REPEAT" scrolls at the channel comment ndcator. 18 DSC OPERATION 6 D Regular call Scrolls The nature of the dstress call should be ncluded n the dstress call. q Push [MENU] to enter the DSC menu. w Push [s] or [t] to select "DISTRESS," and push [ENT]. r After recevng the acknowledgment, reply usng the mcrophone. · "RCV DISTRESS ACK" scrolls at the channel comment ndcator. 6 Scrolls Scrolls e Push [s] or [t] to select the nature of the dstress, push [ENT]. · `UNDESIGNATED,' `EXPLOSION,' `FLOODING,' `COLLISION,' `GROUNDING,' `CAPSIZING,' `SINKING,' `ADRIFT (Dsable adrft),' `ABANDONING (Abandonng shp),' `PIRACY (Pracy attack),' and `MOB (Man overboard)' are avalable. · The selected nature of the dstress s stored for 10 mnutes. dstress alert contans; A · Knds of dstress: Undesgnated dstress · Poston data : Latest GPS or manual nput poston data held for 23.

5 hrs. or untl the power s turned OFF. The Dstress call s repeated every 3.54.5 mn., untl recevng an `acknowledgement.' ( `Call repeat' mode) · "RE-TRANSMISSION" s dsplayed whle transmsson. Scrolls Push [DISTRESS] to transmt a renewed Dstress call, f desred. ush [CLR] to transmt a the `Cancel ACK' call to can P cel the `Call repeat' mode. · "CANCELED" s dsplayed.
When a GPS recever (NMEA0183 ver. 2.0 or 3.01) s connected, next steps r, t (Current poston/tme programmng) do not appear. Go to step y.
Contnue to the next page 19 6 DSC OPERATION y Push [DISTRESS] for 3 sec. to transmt the dstress call. · Whle pushng [DISTRESS], the key backlghtng s blnkng. · The dstress nformaton s stored for 10 mnutes. · Emergency channel (Ch70) s automatcally selected and the Dstress call s transmtted.
· Push [CLR] to ext the condton. r The poston nformaton appears. Set your lattude data usng [s] or [t]. @@@@· Push [CLR] to cancel and ext the condton. Scrolls u After transmttng the dstress call, the transcever wats for an acknowledgment call on Ch 16.

· The dstress call s automatcally transmtted every 3.5 to 4.5 mn. t After settng the longtude data, push [ENT] to set the current UTC tme usng [s] or [t], then push [ENT]. · Push [CH·DUAL] or [16·C] to move the cursor forward or backward, respectvely.

· Push [CLR] to cancel and ext the condton. Scrolls i After recevng the acknowledgment, reply usng the mcrophone. Scrolls 20 DSC OPERATION dstress alert contans (default); A · Nature of dstress : Selected nature of the dstress · Poston data : GPS or manual nput poston data s held for 23.5 hrs or untl the power s turned OFF. 6 n Transmitting DSC calls To ensure correct operaton of the DSC functon, please make sure you set the squelch correctly. (p. 7) The Dstress call s repeated every 3.54.5 mn., untl recevng an `acknowledgement.
' (`Call repeat' mode) · "RE-TRANSMISSION" s dsplayed. Push [DISTRESS] to transmt a renewed Dstress call, f desred. ush [CLR] to transmt a the `Cancel ACK' call to can P cel the `Call repeat' mode. · "CANCELED" s dsplayed. The Indvdual call functon allows you to transmt a DSC sgnal to a specfic shp only. q Push [MENU] to enter the DSC menu. w Push [Y] or [Z] to select "INDIVIDUAL," push [ENT]. D Transmitting an Individual call 6 "??" may blnk nstead of poston and tme ndcatons when the GPS data s nvald, or has not been manually updated after 4 hours. Scrolls e Push [Y] or [Z] to select the desred pre-programmed Indvdual address, push [ENT]. · The ID code must be set n advance.
(p. 14) Scrolls Contnue to the next page 21 6 DSC OPERATION yStands by on the ntershp channel, specfied n step r, untl an acknowledgement s receved. · "WAIT ACK" scrolls at the channel comment ndcator. r Push [Y] or [Z] to select the desred ntershp channel, push [ENT]. · Intershp channels are already preset nto the transcever n preferred order. · After pushng [ENT], Channel 70 s automatcally selected and "READY" appears at the channel comment ndcator. Scrolls Push u When the acknowledgement s receved, "DSC" appears and "RCV ABLE ACK" or "RCV UNABLE ACK" scrolls at the channel comment ndcator wth beeps. · Push [CLR] to stop the beep. t Push [ENT] to transmt the Indvdual call. · If Channel 70 s busy, the transcever stands by untl the channel becomes clear.

@@@@w Push [Y] or [Z] to select "INDV ACK," push [ENT]. @@@@q Push [MENU] to enter the DSC menu. @@(p. @@@@@@@@@@@@· The selectable category may dffer accordng to the programmed settng. Ask your dealer for the avalable categores. Transmitting y After the All Shps call has been transmtted, the specfied channel (n step r) s selected automatcally. r Push [Y] or [Z] to select the desred ITU channel, push [ENT]. · After pushng [ENT], Channel 70 s automatcally selected and "READY" appears at the channel comment ndcator. Scrolls 25 6 DSC OPERATION Transmt a Poston Request call when you want to know a specfied shp's current poston, etc. q Push [MENU] to enter the DSC menu.
w Push [Y] or [Z] to select "POS REQUEST," push [ENT]. D Transmitting a Position Request call r Push [ENT] to transmt the Poston Request call. Transmitting Scrolls t After the Poston Request call has been transmtted, returns to the normal operaton. e Push [Y] or [Z] to select the desred pre-programmed Indvdual address, push [ENT]. · The ID code must be set n advance.
(p. 14) · After pushng [ENT], Channel 70 s automatcally selected and "READY" appears at the channel comment ndcator. Scrolls Push Scrolls 26 DSC OPERATION D Transmitting a Position Reply call 6 Transmt a Poston Reply call when a Poston Request call s receved. q Push [MENU] to enter the DSC menu. w Push [Y] or [Z] to select "POS REPLY," push [ENT].
· "POS REPLY" tem appears after recevng a Poston Request call. t After edtng the poston data, push [ENT] to set. Then edt the current UTC tme drectly wth [Y] or [Z] (p. 17), push [ENT]. · After pushng [ENT], Channel 70 s automatcally selected and "READY" appears at the channel comment ndcator. 6 y Push [ENT] to transmt the Poston Reply call. Scrolls e Push [Y] or [Z] to select the desred ndvdual address, push [ENT]. Scrolls Transmitting r The poston nformaton appears. Input your poston data (lattude and longtude) drectly wth [Y] or [Z]. (p.

17) u After the Poston Reply call has been transmtted, returns to the normal operaton. Scrolls 27 6 DSC OPERATION Transmt a Pollng Request call when you want to know a specfic shp s n the communcaton area, etc. q Push [MENU] to enter the DSC menu. w Push [Y] or [Z] to select "POLL REQUEST," push [ENT]. Scrolls D Transmitting a Polling Request call r Push [ENT] to transmt the Pollng Request call. Transmitting t After the Pollng Request call has been transmtted, returns to the normal operaton. e Push [Y] or [Z] to select the desred pre-programmed Indvdual address, push [ENT]. · The ID code must be set n advance. (p. 14) · After pushng [ENT], Channel 70 s automatcally selected and "READY" appears at the channel comment ndcator.
Scrolls Push Scrolls 28 DSC OPERATION D Transmitting a Polling Reply call 6 Transmt a Pollng Reply call when a Pollng Request call s receved. q Push [MENU] to enter the DSC menu. w Push [Y] or [Z] to select "POLL REPLY," push [ENT]. · "POLL REPLY" tem appears after recevng a Pollng Request call. r Push [ENT] to transmt the Pollng Reply call.
Transmitting Scrolls t After the Pollng Reply call has been transmtted, returns to the normal operaton. 6 e Push [Y] or [Z] to select the desred ndvdual address, push [ENT]. · After pushng [ENT], Channel 70 s automatcally selected and "READY" appears at the channel comment ndcator. Scrolls Push Scrolls 29 6 DSC OPERATION D Test Call Testng on the exclusve DSC dstress and safety callng channels should be avoded as much as possble by usng other methods. When testng on the dstress/safety channel s unavodable, t should be ndcated that these are test transmssons.
Normally the test call would requre no further communcatons between the two statons nvolved. q Push [MENU] to enter the DSC menu. w Push [s] or [t] to select "TEST CALL," and push [ENT]. r Push [ENT] to transmt the Test call. · If Channel 70 s busy, the transcever stands by untl the channel becomes clear. Transmitting t After the Test call has been transmtted, returns to the normal operaton. Scrolls Scrolls e Push [Y] or [Z] to select the desred pre-programmed coast staton address, push [ENT]. · The ID code must be set n advance. (p. 14) · After pushng [ENT], Channel 70 s automatcally selected and "READY" appears at the channel comment ndcator.

Push Scrolls 30 DSC OPERATION D Transmitting a Test Ack call 6 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 Transmt a Test Acknowledgement call when a Test call s receved. q Push [MENU] to enter the DSC menu. w Push [Y] or [Z] to select "TEST ACK," push [ENT]. · "TEST ACK" tem appears after recevng a Pollng Request call. r Push [ENT] to transmt the Test Ack call. Transmitting Scrolls t After the Test Ack call has been transmtted, returns to the normal operaton. e Push [Y] or [Z] to select the desred ndvdual address, push [ENT]. · After pushng [ENT], Channel 70 s automatcally selected and "READY" appears at the channel comment ndcator. Scrolls Push Scrolls 31 6 DSC OPERATION n Receiving DSC calls D Receiving a Distress call · Push any key to stop the alarm. Whle montorng Channel 70 and a Dstress call s receved: The emergency alarm sounds for 2 mnutes.

"DSC" appears and "RCV DISTRESS" scrolls at the channel comment ndcator, then Channel 16 s selected automatcally. Contnue montorng Channel 16 as a coast staton may requre assstance. Whle montorng Channel 70 and a Dstress Relay s receved: The emergency alarm sounds for 2 mnutes. · Push any key to stop the alarm. D Receiving a Distress Relay call "DSC" appears and "RCV RELAY" scrolls at the channel comment ndcator, then Channel 16 s selected automatcally.

Scrolls Scrolls Whle montorng Channel 70 and a Dstress acknowledgement to other shp s receved: The emergency alarm sounds for 2 mnutes. · Push any key to stop the alarm. D Receiving a Distress Acknowledgement Whle montorng Channel 70 and a Dstress Relay acknowledgement s receved: The emergency alarm sounds for 2 mnutes. · Push any key to stop the alarm. D Receiving a Distress Relay Acknowledgement DSC" appears and "RCV DISTRESS ACK" scrolls at the " channel comment ndcator, then Channel 16 s selected automatcally.

"DSC" appears and "RCV RELAY ACK" scrolls at the channel comment ndcator, then Channel 16 s selected automatcally. Scrolls Scrolls 32 DSC OPERATION 6 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 D Receiving an Individual call Whle montorng Channel 70 and an Indvdual call s receved: The emergency alarm or beeps sound for 2 mnutes dependng on the receved category. · Push [CLR] to stop the alarm or beeps. D Receiving a Group call Whle montorng Channel 70 and a Group call s receved: The emergency alarm or beeps sound for 2 mnutes dependng on the receved category. · Push [CLR] to stop the alarm or beeps. "DSC" appears and "RCV INDIVIDUAL" scrolls at the channel comment ndcator. "DSC" appears and "RCV GROUP" scrolls at the channel comment ndcator. Push [ENT] to select the channel specfied by the callng staton for voce communcaton; push [CLR] to gnore the call. Scrolls Scrolls Push [ENT] to reply the call and select the channel specfed by the callng staton for voce communcaton (dependng on your replyng condton. See p, 23 for Indvdual acknowledgement call procedure for detals.

); push [CLR] other key to gnore the call. 33 6 DSC OPERATION D Receiving a Geographical Area call D Receiving an All Ships call Whle montorng Channel 70 and an All Shps call s receved: The emergency alarm sounds for 2 mnutes dependng on the receved categores. · Push [CLR] to stop the alarm or beeps. "DSC" appears and "RCV ALL SHIPS" scrolls at the channel comment ndcator. Push [ENT] to montor Channel 16 for an announcement from the callng vessel, push [CLR] to gnore the call. Whle montorng Channel 70 and a Geographcal Area call (for the area you are n) s receved: The emergency alarm or beeps sound for 2 mnutes dependng on the receved category. · Push [CLR] to stop the alarm or beeps. "DSC" appears and "RCV GEOGRAPHICAL" scrolls at the channel comment ndcator. Scrolls Scrolls Push [ENT] to select the channel specfied by the callng staton for voce communcaton; push [CLR] to gnore the call. Montor the selected channel for an announcement from the callng staton.

When no GPS recever s connected or f there s a problem wth the connected recever, all Geographcal Area calls are receved, regardless of your poston. 34 DSC OPERATION D Receiving a Position Request call D Receiving a Position Reply call 6 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 Whle montorng Channel 70 and a Poston Request call s receved: "DSC" appears and "RCV POS REQUEST" scrolls at the channel comment ndcator. The beeps sound for 2 mnutes. · Push [CLR] to stop the beeps. Whle montorng Channel 70 and a Poston Request Reply call s receved: "DSC" and "POS REPLY" appear n the dsplay. · The 'Lattude' and 'Longtude' from the called staton s dsplayed and scrolled at the channel comment ndcator n order of Lattude co-ordnates and then Longtude co-ordnates. · "NO POSITION" scrolls at the channel comment ndcator when no poston nformaton s receved. [ENT] to reply to the call; push [CLR] to gnore the call. Push The beeps sound for 2 mnutes. Scrolls · Push [CLR] to stop the beeps.

Whle montorng Channel 70 and a Pollng Request call s receved: "DSC" appears and "RCV POLL REQUEST" scrolls at the channel comment ndcator. The beeps sound for 2 mnutes. · Push [CLR] to stop the beeps. D Receiving a Polling Request call Scrolls [ENT] to reply to the call; push [CLR] to gnore the call. Push Whle montorng Channel 70 and a Pollng Reply call s receved: "DSC" appears and "RCV POLL REPLY" scrolls at the channel comment ndcator. The beeps sound for 2 mnutes. · Push [CLR] to stop the beeps. D Receiving a Polling Reply call Scrolls Scrolls 35 6 DSC OPERATION D Receiving a Test call Whle montorng Channel 70 and a Test call s receved: "DSC" appears and "RCV TEST CALL" scrolls at the channel comment ndcator. The beeps sound for 2 mnutes. · Push [CLR] to stop the beeps.

n Received messages The transcever automatcally stores up to 20 dstress messages and 20 other messages. The messages can be used as an assstance to the logbook. [ENT] to reply to the call; push [CLR] to gnore the call. Push D Distress message q Push [MENU] to enter the DSC menu. w Push [s] or [t] to select "DSC LOG," and push [ENT]. Scrolls D Receiving a Test Acknowledgement call Whle montorng Channel 70 and a Test Acknowledgement call s receved: "DSC" appears and "RCV TEST ACK" scrolls at the channel comment ndcator. The beeps sound for 2 mnutes. · Push [CLR] to stop the beeps. e Push [s] or [t] to select "DISTRESS," push [ENT]. Scrolls [ENT] to reply to the call; push [CLR] to gnore the call.

Push r Push [s] or [t] to select the desred message, push [ENT]. · "M" appears when the unread messages s selected. Scrolls Scrolls 36 DSC OPERATION 6 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 t The message nformaton scrolls. · The stored message has varous nformaton. · Push [CLR] to ext the condton. · Push and hold [CLR] for 1 sec. to delete the dsplayed message and returns to DSC menu. r Push [s] or [t] to select the desred message, push [ENT]. · "M" appears when the unread messages s selected. Scrolls Scrolls t The message nformaton scrolls. · The stored message has varous nformaton. · Push [CLR] to ext the condton. · Push and hold [CLR] for 1 sec. to delete the dsplayed message and returns to DSC menu. D Other messages q Push [MENU] to enter the DSC menu. w Push [s] or [t] to select "DSC LOG," and push [ENT]. Scrolls e Push [s] or [t] to select "OTHER," push [ENT]. 37 6 DSC OPERATION n Automatic acknowledgement Ths tem sets the automatc acknowledgement functon ON or OFF. When a poston request or pollng request call s receved, transcever automatcally transmts a poston request reply or pollng reply call, respectvely. q Push [MENU] to enter the DSC menu.

w Push [s] or [t] to select "AUTO ACK," and push [ENT]. n Offset time Ths tem sets the offset tme from the UTC (Unversal Tme Coordnated) tme. q Push [MENU] to enter the DSC menu. w Push [s] or [t] to select "OFFSET TIME," and push [ENT]. Scrolls Scrolls e Push [s] or [t] to turn the automatc acknowledgement functon ON or OFF. e Set the offset tme from the UTC (Unversal Tme Coordnated) tme usng [s] or [t]. · Push [CH·DUAL] or [16·C] to move the cursor forward or backward, respectvely. · Push [CLR] to cancel and ext the condton. r Push [ENT] to set the condton. · Push [CLR] to cancel and ext the condton.

r Push [ENT] to program and to ext the condton. The local tme ndcaton s not avalable when the GPS recever (sentence formatter RMC) s connected, the transcever's dsplay ndcates UTC tme only. 38 SET MODE n Set mode programming Set mode s used to change the condtons of the transcever's functons: Scan type, Scan resume tmer, Dual/Trwatch, Operaton beep, LCD backlght, LCD contrast, AF level adjustment and Favorte channel. Avalable functons may dffer dependng on dealer settng. D SET MODE CONSTRUCTION · Favorite channel · Scan type · Scan resume timer 7 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 q urn power OFF.

T w Whle pushng [16·C], turn power ON to enter Set mode. · "SCAN" appears at the channel comment ndcator. e After the dsplay appears, release [16·C]. r Push [16·C] to select the desred tem, f necessary. t ush [Y] or [Z] to select the desred condton of the P tem.

y Turn power OFF, then ON agan to ext Set mode. · Dual/Tri-watch Scrolls Starting item · To enter Set mode: While pushing · To select the item: Push .( ) , turn power ON. · To exit Set mode: Turn power OFF, then ON again. · AF level adjustment · LCD Contrast · LCD Backlight · Operation beep Scrolls Scrolls 39 7 SET MODE n Set mode items The transcever has 2 scan types: Normal scan and Prorty scan. Normal scan searches all TAG channels n the selected channel group. Prorty scan searches all TAG channels n sequence whle montorng Channel 16. D Scan type D Dual/Tri-watch Ths tem can be selected as Dualwatch or Tr-watch. (p. 12) Dualwatch (default) Tri-watch Priority scan (default) Normal scan D Scan resume timer You can select the slent operaton by turnng beep tones OFF or you can have confirmaton beeps sound at the push of a key by turnng beep tones ON.

D Operation beep The scan resume tmer can be selected as a pause (OFF) or tmer scan (ON). ON : The scan pauses 5 sec. and resumes even f a sgnal has been receved on any other channel than Channel 16. OFF : The scan pauses untl the sgnal dsappears. Beep tone ON (default) Beep tone OFF Scan timer OFF (default) Scan timer ON 40 SET MODE 7 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 D LCD backlight The LCD backlght brghtness can be adjusted from OFF, 1 (dark) to 4 (brght.) LCD backlght s also adjustable va [SCAN·TAG] key. (p. 9) · "BACKLIGHT" scrolls at the channel comment ndcator. When turnng the power ON, a beep s emtted to adjust the audo frequency level va [VOL]. Select the tme perod for the beep emsson from 2, 5, 8, 10 (sec.) or OFF. D AF level adjustment Scrolls LCD backlight level 4 (default) LCD backlight OFF AF level 2 (default) AF level OFF The LCD contrast can be adjustable n 4 levels. 1 s the lowest contrast, and 4 s the hghest contrast. · "CONTRAST" scrolls at the channel comment ndcator. D LCD contrast D Favorite channel Ths tem sets the Favorte channel functon ON or OFF.

The favorte channels are set by the TAG channel settng. (p. 11) · "FAVORITE" scrolls at the channel comment ndcator. ON : [Y]/[Z] keys on the mcrophone select the favorte channels n the selected channel group n sequence when pushed. OFF : [Y]/[Z] keys on the mcrophone select all channels n the selected channel group n sequence when pushed.

Scrolls Scrolls LCD contrast level 3 (default) Favorite channel ON (default) Favorite channel OFF 41 8 q CONNECTIONS AND MAINTENANCE n Connections w e CAUTION: After connectng the DC power cable, GPS recever jack and external speaker jack, cover the connector and jacks wth an adhesve tape as shown below, to prevent water seepng nto the transcever. Rubber vulcanizing tape r t q DC POWER CONNECTOR Connects the suppled DC power cable from ths connector to an external 13.8 V battery. w EXTERNAL SPEAKER JACK Connects to an external speaker. e GPS RECEIVER JACK Connects to a GPS recever for poston ndcaton. · A NMEA0183 ver. @@Ask your dealer about sutable GPS recevers. Outer conductor : NMEA () Inner conductor : NMEA (+) r ANTENNA CONNECTOR Connects a marne VHF antenna wth a PL-259 connector to the transcever. CAUTION: Transmttng wthout an antenna may damage the transcever. t GROUND TERMINAL Connect ths termnal to a vessel ground to prevent electrcal shocks and nterference from other equpment occurrng.

Use a PH M3 × 6 mm screw (not suppled). 42 CONNECTIONS AND MAINTENANCE 8 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 n Antenna A key element n the performance of any communcaton system s the antenna. @@@@@@@@· Mount the transcever so that the face of the transcever s at 90° to your lne of sght when operatng t. CAUTION: KEEP the transcever and mcrophone at least 1 meter away from your vessel's magnetc navgaton compass. NOTE: Check the nstallaton angle; the functon dsplay may not be easy-to-read at some angles.

D Using the supplied mounting bracket EXAMPLE Flat washer Spring washer Knob bolt Screw (5×20 mm) 44 CONNECTIONS AND MAINTENANCE 8 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 n Optional MB-69 installation An optonal MB-69 flush mount s avalable for mountng the transcever to a flat surface such as an nstrument panel. CAUTION: KEEP the transcever and mcrophone at least 1 meter away from your vessel's magnetc navgaton compass. q Usng the template on p. @@@@@@@@e Attach the clamps on ether sde of the transcever wth 2 suppled bolts (5 × 8 mm). · Make sure that the clamps algn parallel to the transcever body.

t r 45 9 TROUBLESHOOTING POSSIBLE CAUSE SOLUTION · Check the connecton to the transcever. · Set [SQL] to the threshold pont. · Set [VOL] to a sutable level. · Dran water from the speaker. REF.

p. 42 p. 7 p. 7 p. 9 PROBLEM The transcever does · Bad connecton to the power supply.

not turn ON. No sound from speaker. · Squelch level s too hgh. · Volume level s too low. · Speaker has been exposed to water. Transmttng s mpos- · Some channels are for low power or re- · Change channels. pgs. 5, sble, or hgh power can ceve only. 6, 50 · The output power s set to low. · Push [HI/LO] on the mcrophone to select p.

7 not be selected. hgh power. Scan does not start. No beeps. Dstress call cannot be transmtted. · TAG channel s not programmed. · Beep tones are turned OFF. · Set the desred channels as TAG channels. · Turn the beep tone ON n Set mode. p.

11 p. 40 p. 13 · MMSI (DSC self ID) code s not pro- · Program the MMSI (DSC self ID) code. grammed. 46 SPECIFICATIONS AND OPTION n Specifications D General · Frequency coverage : Tx 156.

000161.450 MHz Rx 156.000163.425 MHz · Mode : FM (16K0G3E), DSC (16K0G2B) · Channel spacng : 25 kHz · Current dran (at 13.8 V) : TX hgh 5.

5 A max. Max. audo 1.5 A max. · Power supply requrement : 13.8 V DC (10.8 to 15.6 V) (negatve ground) · Frequency stablty : Less than ±1.5 kHz · Operatng temp. range : 20°C to +60°C · Antenna mpedance : 50 ø nomnal · Input mpedance (MIC) : 2 kø · Output mpedance (audo) : 4 ø · Dmensons : 164(W) × 78(H) × 139.

5(D) mm (Projectons not ncluded) · Weght : Approx. 1080 g 10 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 D Transmitter : 25 W/1 W : Varable reactance frequency modulaton · Max. frequency devaton : ±5.0 kHz · Spurous emssons : Less than 0.25 µW · Adjacent channel power : More than 70 dB · Audo harmonc dstorton : Less than 10% (at 60% devaton) · Resdual modulaton : More than 40 dB · Audo frequency response : +1 to 3 dB of 6 dB/octave range from 300 to 3000 Hz · RF output power · Modulaton system D Receiver · Receve system : Double converson superheterodyne · Senstvty (20 dB SINAD) : 5 dBµ emf (typcal) · Squelch senstvty : Less than 2 dBµ emf · Intermodulaton rejecton rato : More than 68 dB · Spurous response rejecton rato : More than 70 dB · Adjacent channel selectvty : More than 70 dB · Audo output power : More than 2.0 W at 10% dstorton wth a 4 ø load All stated specifications are subject to change without notice or obligation. 47 10 SPECIFICATIONS AND OPTION D Dimensions 148 139.5 60.6 164 28.3 111.

2 14.2 Unit: mm 48 78 SPECIFICATIONS AND OPTION 10 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 n Option · MB-69 flush mount kit For mountng the transcever to a panel. 49 11 CH 01 02 03 04 05 06 07 08 09 10 Transmit 156.050 156.100 156.

150 156.200 156.250 156.300 156.350 156.

400 156.450 156.500 CHANNEL LIST CH 11 12 13 14 16 18 19 20 Frequency (MHz) Transmit 156.550 156.600 156.650 156.700 156.800 156.900 156.950 157.

000 Receive 156.550 156.600 156.650 156.700 156.750 156.800 156.850 161.500 161.550 161.

600 CH 21 22 23 24 25 26 27 28 60 Frequency (MHz) Transmit 157.050 157.100 157.150 157.200 157.

250 157.300 157.350 157.400 156.025 Receive 161.

650 161.700 161.750 161.800 161.850 161.900 161.950 162.000 157.850 160.625 CH 61 62 63 64 65 66 67 68 69 Frequency (MHz) Transmit 156.

075 156.125 156.175 156.225 156.275 156.325 156.375 156.425 156.475 Receive 160.675 160.

725 160.775 160.825 160.875 160.925 156.

375 156.425 156.475 156.525 CH 71 72 73 74 Frequency (MHz) Transmit 156.575 156.

625 156.675 156.725 Receive 156.575 156.625 156.675 156.725 156.775 156.825 156.875 161.

525 161.575 161.625 CH 81 82 83 84 85 86 87 88 Frequency (MHz) Transmit 157.075 157.125 157.175 157.225 157.275 157.325 157.375 157.

425 Receive 161.675 161.725 161.775 161.825 161.

875 161.925 157.375 157.425 161.425 · International channels Frequency (MHz) Receive 160.

650 160.700 160.750 160.800 160.850 156.300 160.950 156.400 156.450 156.500 15*2 156.

750 17*2 156.850 75*4 156.775 76*4 156.825 77 78 79 80 156.875 156.925 156.975 157.025 37A*3 157.850 P4*3 161.425 70*1 156.

525 *1 DSC operation only. *2 Channels 15 and 17 may also be used for on-board communications provided the effective radiated power does not exceed 1 W, and subject to the national regulations of the administration concerned when these channels are used in its territorial waters. *3 UK Marina Channels: M1=37A (157.850 MHz), M2=P4 (161.425 MHz) for U.

K. version only *4 The use of these channels should be restricted to navigation-related communications only and all precautions should be taken to avoid harmful interference to channel 16, e.g. by limiting the output power to 1 W or by means geographical separation. 50 CHANNEL LIST · USA channels (for U. K. version only) CH Frequency (MHz) Transmit ----156.300 156.400 156.450 156.500 156.550 Receive 156.050 --156.150 --156.250 156.

300 156.350 156.400 156.450 156.500 156.550 CH 12 14 16 Frequency (MHz) Transmit 156.600 156.700 156.800 Receive 156.600 156.

650 156.700 156.750 156.800 156.850 156.

900 156.950 161.600 157.000 157.050 CH Frequency (MHz) Transmit Receive 157.

100 157.150 161.800 161.850 161.900 161.950 162.000 157.850 156.075 --156.175 CH Frequency (MHz) Transmit Receive 156.

225 156.275 156.325 156.375 156.425 156.475 156.525 156.575 156.625 156.675 156.

725 CH 75* 1 11 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 Frequency (MHz) Transmit 156.775 Receive 156.775 156.825 156.875 156.

925 156.975 157.025 157.075 157.125 157.

175 161.825 157.225 CH 85 86 87 88 Frequency (MHz) Transmit 157.275 157.325 157.375 157.425 Receive 161.875 157.275 161.925 157.

325 161.975 157.375 162.025 157.425 161.425 01A 156.050 --06 08 09 10 11 1 22A 157.100 23A 157.150 24 25 26 27 28 157.200 157.
250 157.300 157.350 157.400 64A 156.225 65A 156.
*275 66A 156.325 67*2 156.375 68 69 71 72 73 74 156.425 156.475 156.*
*575 156.625 156.675 156.725 13*2 156.650 15*2 156.750 17*1 156.850 18A 156.900 19A 156.950 20 157.000 20A 157.*

*000 21A 157.050 76*1 156.825 77*1 156.875 78A 156.925 79A 156.975 80A 157.025 81A 157.075 82A 157.125 83A 157.175 84 157.*

225 84A 157.225 85A 157.275 86A 157.325 87A 157.375 88A 157.
*425 P4*4 161.425 03A 156.150 05A 156.250 07A 156.350 70*3 156.*
*525 37A*4 157.850 61A 156.075 ---63A 156.175 * Low power only. *2 Momentary high power. *3 DSC operation only. *4 UK Marina Channels: M1=37A (157.850 MHz), M2=P4 (161.425 MHz) for U.K.*

version only NOTE: Simplex channels, 3, 21, 23, 61, 64, 81, 82 and 83 CANNOT be lawfully used by the general public in U.S.A. waters. 51 TEMPLATE 164 149 12 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 R8 (Max.) 61.6 Cut here Unit: mm NOTE: The sold lne s the lne to use when cuttng nto the dash/helm. The dotted lne shows the outlne of the IC-M411's front panel once the rado s fitted nto the hole. Do not follow the dotted lne when makng the hole n your dash/helm. 78 53 MEMO 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 MEMO MEMO 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 AT FI IT PL GB RO < Intended Country of Use > BE FR LV PT IS TR CY DE LT SK LI HR CZ GR LU SI NO DK HU MT ES CH EE IE NL SE BG A-6615D-1EU-a Prnted n Japan © 2007 Icom Inc.

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