

## Table of contents

Indledning .....	2
Vandtæt design Info.....	3
Taste forklaring.....	4
Taste funktioner.....	5
Display .....	5
Menu funktioner.....	6
Beskrivelse andre menu funktioner.....	6
DSC Menu.....	7
MMSI ID setup.....	8
Individuelt kald Pos request, Group/Test kald.....	8
All ship call.....	10
Receive call log .....	11
Send call log.....	11
Phone book .....	11
DSC setup .....	12
Distress Menu.....	12
Hoved Menu.....	13
VHF operation .....	13
GPS setting .....	14
System config.....	14
Taste operationer.....	15
Power ON/OFF Volume control .....	15
Special funktion tast.....	15
SQL tast.....	15
Up/Down tast.....	15
16/9 tast.....	15
Valg af 2. Prioritets kanal.....	15
Hi/Lo/Lock tast.....	16
CH/*/Wx key .....	16
SCAN tast.....	16
MEM tast.....	16
DW/Tri Watch tast.....	17
MOB tast.....	17
Display lys.....	17
Tx Time Out.....	17
Batteri.....	18
Forbindelses kabel.....	18
Lokal Tid & Dato.....	19
Appendix A – Near Lightning Strike Test.....	20
Annexe B – Kanal Liste.....	21
Declaration of conformity CE.....	28

# HM-360 DSC Instruktions Manual

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## Indledning

Din nye HM-360 DSC er udviklet af de bedste teknologier. Designet til international brug, giver den dig mulighed for at sende og modtage på alle de internationale kanaler i det marine bånd VHF som specificeret af den internationale union (ITU)

Enheden er af høj kvalitet elektronisk udstyr, bygget i henhold til regelbogen med de bedste komponenter, der svarer til alle markedets standarder for at give dig klar og pålidelig kommunikation.

Din sender-modtager er designet til at levere pålidelig funktion i mange år, takket være en mikroprocessor med optimeret præstation.

Bemærk: Inden for rammene af direktivet WEEE skal produkter, der er udtjent, bortskaffes på behørig vis.

## EU Regulatory Conformance

As certified by the qualified laboratory, the product is in compliance with the essential requirements and other relevant provisions of the Directive 1999/5/EC. Please note that the above information is applicable to EU countries only.

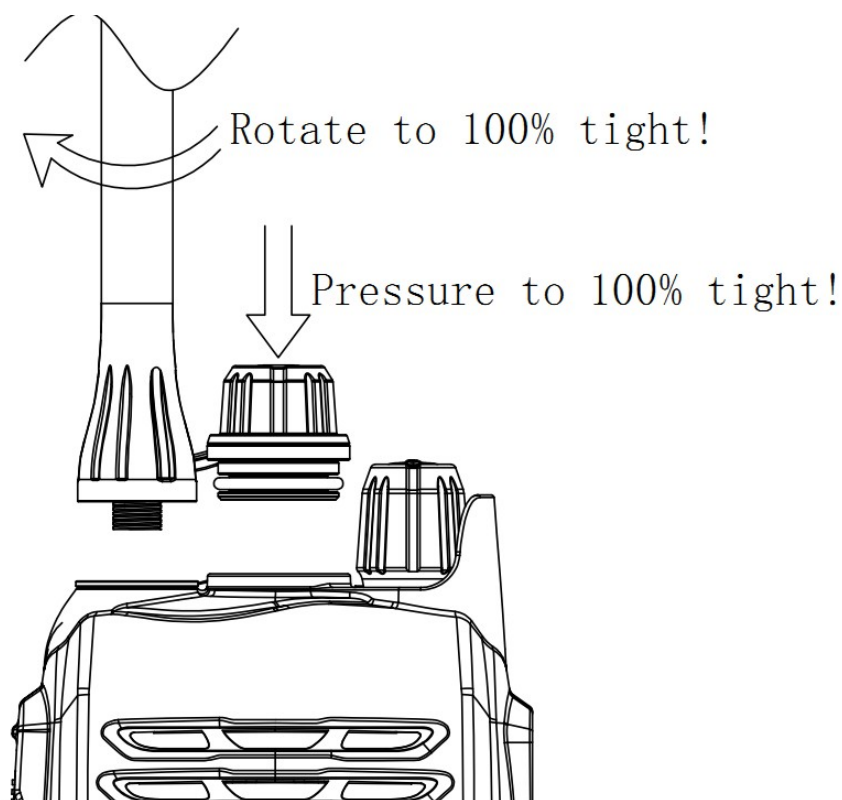
# CE 0678

## Waterproof design Warning:

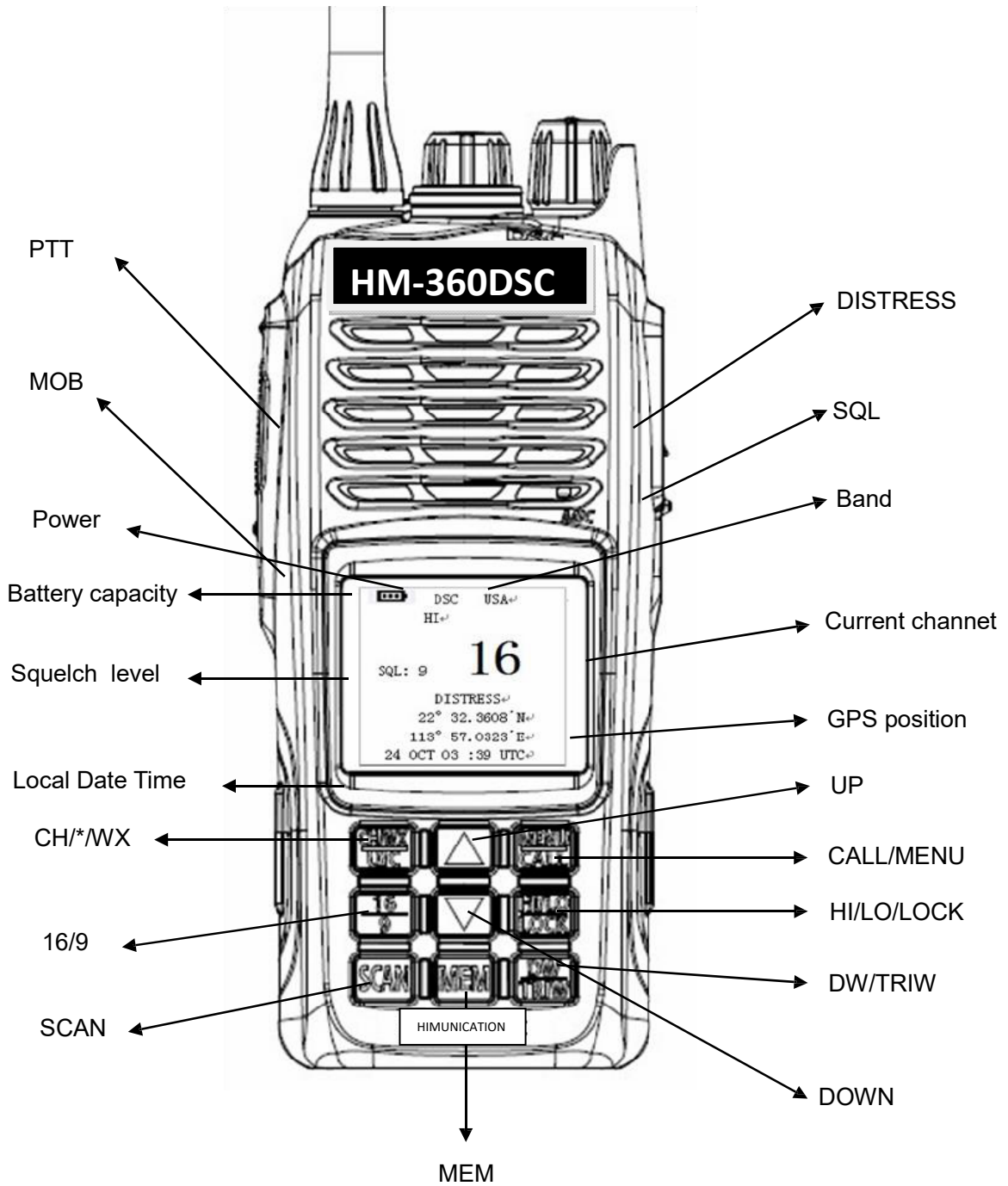
Dette produkt er IP67 vandtæt design for at opnå den bedste værdi for brugeren.

Vær opmærksom på følgende to punkter:

- 1, For at stramme antennen, brug O-ring i bunden af antennen
- 2, For at tildække mini-USB-hætten tæt, brug O-ring omkring hætten



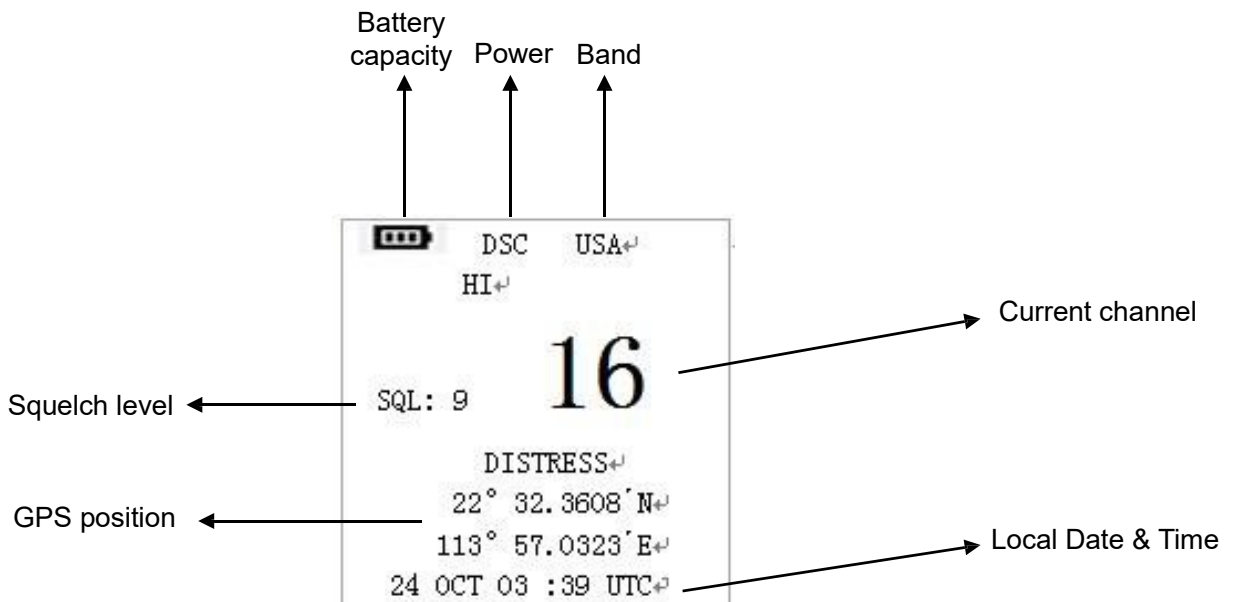
### Taste Beskrivelse



## Key function

Tast:	Kort tryk mindre end 3 sekunder:	Langt tryk mere end 3 sekunder:
HI/Lo /Lock	TX Power Hi/Low	Key Lock/key unlock
16/9	CH 16	CH09
DW/TriW	Dual Watch mode	Tri Watch mode
SCAN	All Scan/all memory Scan	Priority all/memory Scan
MEM	MEMORY Mode	Save/Delete Memory Channel
Up/Down	Channel/ Setting Up/Down	Channel up /down(much faster)
Menu/Call	DSC menu	Hoved menu
MOB		MOB aktiveres
Distress	Distress menu	Distress Alert Call
SQL	Sql setting	Switch on/off Time& Date display
Volume Knob	Power ON / OFF Juster volume styrke	

## Display



## Menu funktioner

### Beskrivelse af menu funktioner

#### Hoved Menu

VHF Operation	{ Channel Band Set Priority 2nd ch
GPS Setup	GPS Setting
ATIS Operation	{ My ATIS ID AITS Function
DSC Operation	{ My MMSI ID DSC Function
System Config	{ System Config LCD Back Light Back Light Time LCD Contrast Key Beep Version Info Factory Reset

#### DSC Menu

Individual Call	{ Input Address From Phonebook
Position Request	{ Input Address From Phonebook
All Ship Call	{ Routine Safety Urgency
Group Call	{ Input Address From Phonebook
Test Call	{ Input Address From Phonebook

Receive Call Log	{ ☞ Distress Call ☞ Others Call
Send Call Log	{ ☞ Distress Call ☞ MOB Call ☞ Others Call
Phone Book	{ Buddy List Group List
DSC Setup	{ Position Input Auto Ch Change Position Reply Test Ack
My MMSI ID	{ My MMSI ID 100000008

**DSC Menu:**

Kort tryk på Call/Menu tast vil gemme nedenstående DSC Menu.

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

Exit ▲▼ Enter

Derefter bliver CH/\*WX-tasten Exit-tasten, og Call / Menu-tasten bliver Enter-tasten.  
 OP/NED-tastfunktionen har den samme funktion til at vælge emnet i menuen uden ændringer.

### My MMSI ID setup

For det første skal du oprette MMSI-ID'et, klik på MMSI-ID'et og Enter, så er du i stand til at konfigurere dit MMSI-ID som nedenfor, du skal indsætte MMSI-ID'et TO gange, så vil dit MMSI-ID blive låst af radioen.

```
MY MMSI ID
  123456789

Exit
```

Når du indtaster de 9 cifre, med OP/NED-tasten for at vælge tal fra 1-9, skal du indtaste alle tal fra venstre mod højre et efter et. Når du har indtastet alle 9 cifre, skal du trykke på enter for at bekræfte.

```
Input Address
Input 9 digits
123- - - - -

Exit ▲▼ Enter
```

Når du har indtastet de ni tal "219xxxxx", vises skærmen som nedenfor.

```
Input Address
Input 9 digits
219xxxxxx

Exit ▲▼ Enter
```

### For individuelt opkald, positionsanmodning, gruppeopkald og testopkald.

Klik på det foretrukne emne, så er du i stand til at finde det MMSI-, du vil ringe til via inputadresse eller fra Telefonbog. Vi tager det individuelle opkald som et eksempel.

Når du har valgt modtager adressen indtast 9 cifre såsom 10000000 for adressen som nedenfor.

```
Input Address
Input 9 digits
10000000
```

Exit ▲▼ Enter



Vælg derefter den individuelle type kald såsom Safety-Call

```

Individual Call
Routine
S af ety
Urgency

Exit ▲▼ Enter
    
```

Vælg derefter kanal såsom 01-port (Havn) operation, bekræft derefter for at fortage opkald.

```

Individual Call
Select Channel:
01 port ops/vts
03 unauthorized
05 port ops/vts
06 inter ship
07 commercial
08 commercial
Exit ▲▼ Enter
    
```

Derefter foretages det individuelle opkald.

```

Individual Call
To: 100000000
Safety
Telephony by
Channel 01

Exit Call
    
```

Det individuelle opkald er fortaget.

```

DSC USA
LO SQL:5

01A

PORT OPERAT/UTS
Elapsed 00: 12
Exit
    
```

**All Ship Call:**

Vælg "All Ship Call" punktet

```
DSC Menu
Individual Call
Position Request
All Ship Call
Group Call
Test Call
Receive Call Log
Send Call log
Phone Book
DSC Setup
My MMSI ID
Exit ▲▼ Enter
```

Vælg derefter typen af alle opkald, såsom "Urgency"

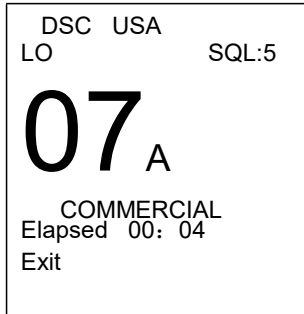
```
All Ship Call
Routine
Safety
Urgency
Exit ▲▼ Enter
```

Vælg derefter kanal såsom 07 Commercial, og bekræft derefter opkald.

```
Individual Call
Select Channel:
01 port ops/vts
03 unauthorized
05 port ops/vts
06 inter ship
07 commercial
08 commercial
Exit ▲▼ Enter
```

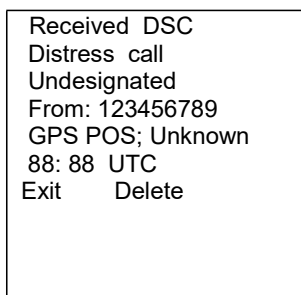
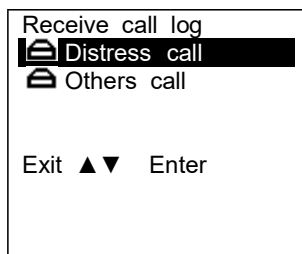
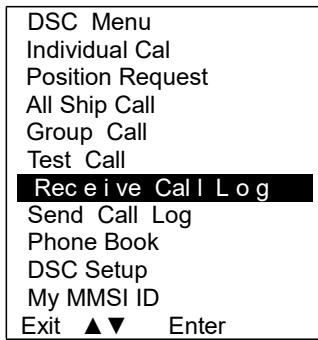
Derefter vil "All Ship Call" sendes.

```
All Ship Call
To : All Ship
Urgency
Telephony by
Channel 07
Exit Call
```



**Receive Call Log**

Når du modtager DSC-opkald, er du i stand til at kontrollere meddelelsen fra nødopkaldet og derefter kunne se den nøjagtige meddelelse.



**Send Call Log**

Tryk på **“Send Call Log”**, for at se forrige Distress Call MOB Call og andre opkald, du har foretaget.

**Phone Book:**

Gør dig i stand til at kontrollere kontaktskib efter venne- og gruppe-liste.

**DSC Setup**

DSC-opsætningsmenuen har 4 punkter at vælge: Position input, Auto Ch Change, Position Reply og Test Ack.

For position input kan du indstille GPS-position og UTC-tid ved manuel betjening.

For Auto Ch Change, Position Reply og Test Ack kan du vælge Automatic eller Manual af dine interesser.

**Distress Menu:**

Træk det røde nøddæksel, og tryk derefter på nødtasten. Du kan se nødmenuen nedenfor.

```

Distress Menu
Undesignated
Fire „Explosion
Flooding
Collision
Grounding
Capsizing
Sinking
Abandoning
Piracy
Man Overboard
Exit
  
```

**Send “Distress Message”:**

Vælg et nødelement, f.eks. “Sinking” (Synker), tryk og hold nødtasten nede i 3 sekunder: Synke nødmeddelelse sendes.

```

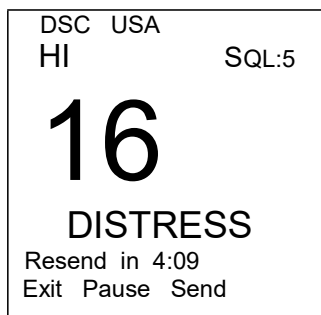
Distress Menu
Undesignated
Fire, Explosion
Flooding
Collision
Grounding
Capsizing
Sinking
Exit ▲▼
  
```

Du kan også vælge at videresende, sætte på pause eller afslutte, når meddelelsen er sendt.

```

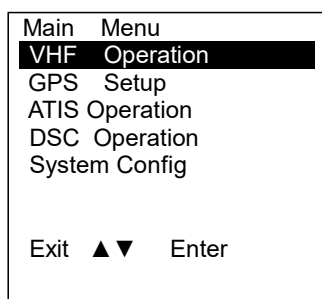
Distress Call
Sinking

Push the key
For 3 Seconds!
  
```



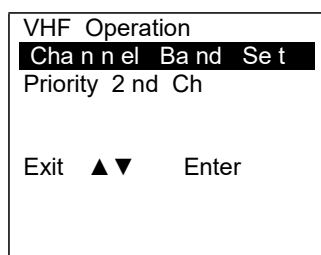
## Hoved Menu / Main Menu:

Langt tryk på Opkald / Menu-tasten under hovedmenuen som nedenfor.

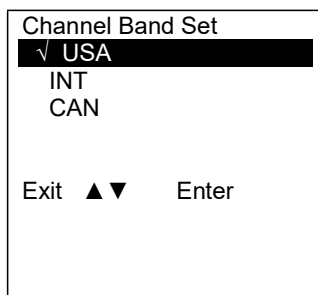


## VHF Operation:

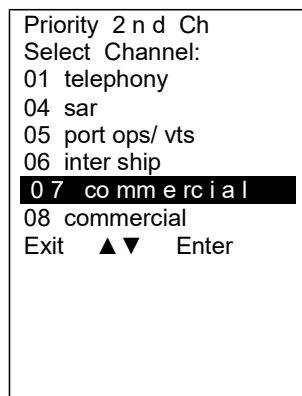
Vælg den VHF-operation, der ønskes. Vælg Channel Band Set eller Priority 2nd Ch mulighed som nedenfor.



Til VHF-drift er du i stand til at vælge det ønskede kanalbånd blandt disse tre muligheder USA, INT og CAN.



For Priority 2nd Ch kan du vælge den ønskede 2. prioritet kanal.

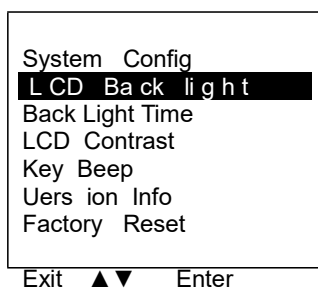


### GPS Opsætning:

Du kan indstille Time Display og Time Offset og få den locale tid og dato på skærmen 5.4 (4):

### System Configuration:

Vælg systemkonfiguration, og du kan se nedenstående menu for at kontrollere og justere figuren LCD/taste bip, versions info og fabriksindstilling.



## Taste Operation

### Power ON/OFF & Volume Kontrol

Drej lydstyrkeknappen med uret, indtil der høres en kliklyd, og enheden tændes.

### Volume Kontrol:

Drej lydstyrkeknappen: Lydstyrke op: Drej med uret / Lydstyrke ned: mod uret.

### Special function: Distress Key & Real DSC

#### Send Distress message:

Løft nødtastedsækslet og du kan derefter på den røde tast for valg af nødmenu. Vælg derefter den aktuelle nødsituation såsom "Flooding/Vandindtag", hold derefter ned i 3 sekunder, og den valgte DSC-besked sendes.

Denne meddelelse sendes igen efter 4 minutter, tryk på Op-tasten for at sætte på pause eller genoptage genudsendelsen, tryk på Call/Menu tasten for at gensende. Tryk på CH/\*/WX-tasten for at forlade den aktuelle menu og give mulighed for at annullere den valgte nødalarm.

#### Modtage nødmeddelelse:

HM360-modellen har to modtagere, en modtager, der bruges til modtagelse/transmission af stemme, og en anden modtager, der bruges til kontinuerligt at overvåge "70" kanaler. DSC-funktionen til HM360-modellen betjenes individuelt. Selv hvis du bruger HM360 til at foretage eller modtage transmissioner, vil DSC meddelelser behandles. Den håndholdte HM360-model kan altid modtage hele DSC-meddelelsen som en fast monteret marinradio.

Tryk på opkalds- / menu tasten, vælg modtagelsesopkaldslog, tryk derefter på enter for at se alle modtagne DSC-beskeder.

#### SQL-tast

Kort tryk på SQL-tasten, tryk derefter på Op/Ned-tasten for at vælge ønskede "squelch"-niveau.

Tryk derefter kort på SQL-tasten for at afslutte justeringen af squelch-niveauet.

Langt tryk på SQL-tasten, åbner for GPS-funktioner, tryk på op/ned-tasten for at se COG / SOG og GPS-signalet via den aktuelle satellit.

For at vælge kilometer eller knob skal du trykke et langt tryk på opkald/menu tasten og derefter vælge GPS opsætning, herefter vælge GPS-indstilling og så vælge hastighedsenheden, du kan så vælge knob / km.

Når du har valgt, skal du afslutte, så holder radioen dit sidste valg.

#### Op/Ned Taster

I normal tilstand fungerer de som kanal op/ned-tast. Når du trykker > 0,5 sek., skifter kanalerne hurtigt. Din VHF returnerer til normal tilstand, når trykket slippes.

#### 16/9 tast

I normal tilstand vil et tryk på 16/9-tasten (kort tryk for at springe til prioritet CH16 med høj effekt og langt tryk for at springe til prioritet CH9 med høj effekt), hvis den aktuelle kanal ikke er prioritetskanalen.

Når kanalen er indstillet til prioritetskanalen, lyser ikonet "P-CH" og "P-2nd" for at indikere, at prioriteten CH16 eller CH9 er opnået. OP / NED-tasten fungerer normalt.

#### Valg af "second priority channel"

Skift den anden prioritetskanal med 16/9-tasten: normalt er den anden prioritetskanal indledningsvis indstillet som kanal 9. Ved normal tilstand vil langt tryk på 16/9-tasten vise den anden prioritetskanal som kanal 9. Tryk derefter langt på 16/9-tast igen, og ikonet "2. prior" vises på skærmen. Brug OP / NED-tasten til at vælge din foretrukne kanal som kanal med anden prioritet, og tryk derefter langvarigt på 16/9-tasten for at bekræfte den.

Skift den anden prioritetskanal ved hjælp af menu tasten: Tryk på 16/9-tasten, tryk derefter på opkalds- / hovedtasten for at vælge VHF-funktion, tryk derefter på Enter for at vælge Prioritet 2. kanal, tryk derefter på Enter, og vælg den foretrukne kanal ved hjælp af Op / Ned-tast tryk på Enter for at bekræfte.

## Hi/Lo/Lock Tast

Kort tryk på Hi / Lo / LOCK-tasten skifter TX-strøm fra Hi til Lo eller omvendt. Det tilsvarende "HI eller Lo" -ikon tændes og bliver vist på LCD-skærmen.

Nogle kanaler, f.eks. kanal 16 sender altid med høj effekt & kanal 13 og 67 altid med lav effekt. Derfor skal softwaren kontrollere, at kanalindstillingen er gemt i EEPROM

Tryk langvarigt på Hi / Lo / LOCK-tasten for at låse tasterne og ikonet "Lock-Key/låseknop", så bliver hele tasten låst til brug undtagen PPT-nøglen og nødtasten / relateret nødfunktion. Langt tryk på Hi / Lo / Lock-tast igen for at annullere låsefunktionen, og ikonet "lås-tast" forsvinder.

## Ch\*/Wx Tast

Kort tryk på CH\*/WX-tasten giver privat tilstand, hvis der er den samme private kanal i EEPROM. Ikonet "PRIVATE" vises på skærmen. Tryk på Op / Ned-tasten for at skifte privat kanal.,

Hvis der ikke er nogen privat kanal i EEPROM, vises ikonet "-" på skærmen.

### **Weather Band:**

Langt tryk på CH\*/WX-tasten giver WX-tilstand, når det aktuelle operationelle kanalbånd er USA eller Canada. Når Dual- eller Tri-watch aktiveres i Wx-tilstand, overvåges den aktuelle WX-kanal og prioritetskanal(er).

## Scan Tast

Dette er funktionen til at scanne efter kanaler aktuelt i brug. Når der registreres et signal, standser scanningen, indtil signalet forsvinder.

Kort tryk på Scan-tasten for at aktivere SCAN-funktionen. Scan alle kanaler. Langt tryk på Scan-tasten for at aktivere Prioritetsscanning.

## MEM Tast

Enter /Exit the memory mode:

Tryk kortvarigt på MEM-tasten for at gå ind i hukommelsestilstand, hukommelseskanalen markeres som "M" -ikonet i højre side af kanalnummeret. På venstre side af den aktuelle kanal markeres som "bruger" -ikonet betyder, at det allerede er gå ind i brugerhukommelsestilstanden.

I hukommelsestilstand skal du trykke kortvarigt på MEM-tasten for at afslutte hukommelsestilstanden.

"M" -ikonet (til højre for kanalnummeret) og "bruger" -ikonet (til venstre for den aktuelle kanal) forsvinder.

Tilføj/Slette memory CH:

I normal tilstand skal du bruge OP / NED-tasten til at vælge den ønskede kanal til programmering. Langt tryk på MEM-tasten for at gemme kanalen som hukommelseskanal.

"M" -ikonet til højre for det aktuelle kanalnummer vises for at indikere, at den aktuelle CH er gemt i hukommelsen. Ingen begrænsning af hukommelseskanaler.

Der findes en separat hukommelseskanal for USA, International og Canadian Frequency group.

I den normale tilstand skal du bruge OP / NED-tasten til at vælge den hukommelseskanal, der skal slettes. Langt tryk på MEM-tasten for at slette den valgte kanal fra hukommelsen.



## DW/TriW Tast /Dual Watch/Tri Watch

I normal tilstand skal du trykke kort på DW / TRIW-tasten for at aktivere DUAL WATCH-tilstand. Overvåg den aktuelle kanal og Ch16 i cyklus. Når Weather Alert er aktiveret, overvåges Wx Alert-kanalen en gang hver 4.sek.

Langt tryk på DW / TRI-tasten for at aktivere TRI WATCH-tilstand. Overvåg Ch 16, nuværende kanal og 1 programmerede kanaler i cyklus.

## MOB Tast

Langt tryk på MOB-tasten aktiverer MOB-funktionen. Radioen sender et MOB-opkald med sit MMSI nr. samt breddegrad og længdegrad.

## Baggrundslys / Backlight

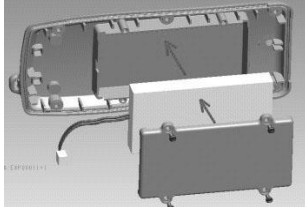
Ethvert tastetryk vil tænde baggrundsbelyst (hvis baggrundsbelyst indstilling er TIL) undtagen PTT-tasten. Baggrundslys vil være tændt i 5 sekunder, hvis der ikke trykkes på nogen taster. Timeout nulstilles, hvis der trykkes på en tast inden for tidsrammen.

## TX Time Out

Transmissionen afbrydes automatisk, når PTT-tasten er trykket ned i over 5 minutter. TX-tilstanden afsluttes og vende tilbage til Rx-tilstand. Når PTT-tasten er sluppet, nulstilles TX-timeout-timeren og PTT-tasten fungerer normalt igen.

## Build in Battery

HM-360DSC-modellen har indbygget batteri. Der er tre trin til installation og fjernelse af batteriet i nedenstående diagram.



**Step1**



**Step2**

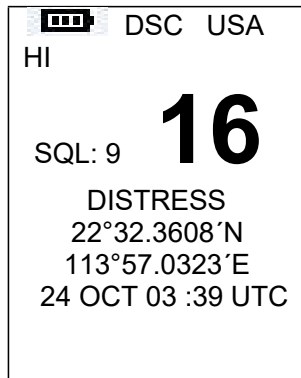


**Step3**

## Connection Cable

På grund af HM-360DSC's indbyggede batteri benyttes IP68-forbindelseskablet (1,5 meter længde) til strømoplader. Det bruges også til softwareopdatering og automatisk test i fremstillingsfasen.

## Lokal Tid & Dato / The local time and date on screen:



UTC TIME

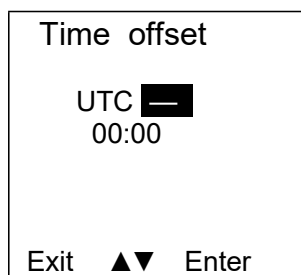


LOCAL TIME

Når HM360 ikke kan modtage GPS-signalet for at vise den aktuelle position, viser skærmen automatisk UTC lokal tid og dato.

Langt tryk på SQL-tasten tænder / slukker visning af tidsdato. Når radioen modtager GPS-signalet, viser skærmen den aktuelle GPS-placering og relaterede UTC-tid og dato under GPS-placeringsmærket.

Brugeren kan trykke på menuen for at skifte til lokal tid baseret på UTC-tid. Tryk længe på opkalds-/menu-tasten, og vælg derefter det GPS-opsætningselement, du vil åbne. Derefter kan du gemme GPS-indstillingen og klikke på enter for at vælge tidsforskydning. Derefter er du i stand til at justere din placeringstid baseret på tidsforskellen med UTC-tiden, og tryk derefter på enter for at bekræfte. (Du er nødt til at angive time-, minutter- & sekunder og derefter gemme indstillingerne ved at klikke og bekræfte).



## Appendix A – Near Lightning Strike Test

Dette appendiks beskriver den generelle procedure til evaluering af immuniteten over for næsten lynnedslag (NLS) på HM-360DSC VHF-radioen. Testen simulerer en langsom, højenergipuls produceret af en NLS-begivenhed.

### Related External Documents

- ✓ **BS EN 61000-4-5: 2006**
- ✓ **EMC Directive 2004/108/EC**

### List of Abbreviations

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

### Sikkerhed/Safety

Højspændingsinterferenspulsen kan indeholde en meget stor mængde energi, og der skal træffes alle forholdsregler for at undgå kontakt med EUT under en test. Det anbefales stærkt, at mindst en anden person er til stede (eller meget tæt på) under testen.

### Test Configuration

#### EUT

#### Setup

The EUT shall be setup in a typical system configuration on an isolated wooden bench with NO GROUNDPLANE. The power to the EUT and auxiliary equipment shall be from 12V or 24V sealed lead-acid batteries via a suitable fuse. The length of the EUT power cable shall be no more than 2m. Any screens within the system shall be terminated at the battery very connection.

#### EUT- Operating- Configuration

All operating configurations should be tested with appropriate performance criteria defined for each test.

### Performance Criteria

From BS EN 61000-4-5: 2006

Performance criteria C: Temporary loss of function or degradation of performance, the correction of which requires operator intervention.

## Appendix B – Channel List

### International Marine VHF Channels & Frequencies

CH No.	XMIT	Freq	RCV	Freq	Single	Freq Use
01	156.050	160.650				Public Correspondence, Port Operations and Ship Movement
02	156.100	160.700				Public Correspondence, Port Operations and Ship Movement
03	156.150	160.750				Public Correspondence, Port Operations and Ship Movement
04	156.200	160.800				Public Correspondence, Port Operations and Ship Movement
05	156.250	160.850				Public Correspondence, Port Operations and Ship Movement
06	156.300	156.300	x			Intership 1
07	156.350	160.950				Public Correspondence, Port Operations and Ship Movement
08	156.400	156.400	x			Intership
09	156.450	156.450	x			Intership, Port Operations and Ship Movement
10	156.500	156.500	x			Interships, Port Operations and Ship Movement 2
11	156.550	156.550	x			Port Operations and Ship Movement
12	156.600	156.600	x			Port Operations and Ship Movement
13	156.650	156.650	x			Intership Safety, Port Operations and Ship Movement 3
14	156.700	156.700	x			Port Operations and Ship Movement
15	156.750	156.750	x			Intership and On-board Communications at 1W only 4
16	156.800	156.800	x			Distress, Safety and Calling
17	156.850	156.850	x			Intership and On-board Communications at 1W only 4
18	156.900	161.500				Public Correspondence, Port Operations and Ship Movement
19	156.950	161.550				Public Correspondence, Port Operations and Ship Movement
20	157.000	161.600				Public Correspondence, Port Operations and Ship Movement
21	157.050	161.650				Public Correspondence, Port Operations and Ship Movement
22	157.100	161.700				Public Correspondence, Port Operations and Ship Movement
23	157.150	161.750				Public Correspondence, Port Operations and Ship Movement
24	157.200	161.800				Public Correspondence, Port Operations and Ship Movement
25	157.250	161.850				Public Correspondence, Port Operations and Ship Movement
26	157.300	161.900				Public Correspondence, Port Operations and Ship Movement
27	157.350	161.950				Public Correspondence, Port Operations and Ship Movement
28	157.400	162.000				Public Correspondence, Port Operations and Ship Movement
60	156.025	160.625				Public Correspondence, Port Operations and Ship Movement
61	156.075	160.675				Public Correspondence, Port Operations and Ship Movement
62	156.125	160.725				Public Correspondence, Port Operations and Ship Movement
63	156.175	160.775				Public Correspondence, Port Operations and Ship Movement
64	156.225	160.825				Public Correspondence, Port Operations and Ship Movement
65	156.275	160.875				Public Correspondence, Port Operations and Ship Movement
66	156.325	160.925				Public Correspondence, Port Operations and Ship Movement
67	156.375	156.375	x			Intership, Port Operations and Ship Movement 2
68	156.425	156.425	x			Port Operations and Ship Movement
69	156.475	156.475	x			Intership, Port Operations and Ship Movement
71	156.575	156.575	x			Port Operations and Ship Movement
72	156.625	156.625	x			Intership
73	156.675	156.675	x			Intership 2
74	156.725	156.725	x			Port operations and Ship movement
75	156.775	156.775	x			See Note 5
76	156.825	156.825	x			See Note 5
77	156.875	156.875	x			Intership
78	156.925	161.525				Public correspondence, Port Operations and Ship Movement
79	156.975	161.575				Public correspondence, Port Operations and Ship Movement
80	157.025	161.625				Public correspondence, Port Operations and Ship Movement
81	157.075	161.675				Public correspondence, Port Operations and Ship Movement
82	157.125	161.725				Public correspondence, Port Operations and Ship Movement
83	157.175	161.775				Public correspondence, Port Operations and Ship Movement
84	157.225	161.825				Public correspondence, Port Operations and Ship Movement
85	157.275	161.875				Public correspondence, Port Operations and Ship Movement
86	157.325	161.925				Public correspondence, Port Operations and Ship Movement
87	157.375	157.375	x			Port Operations and Ship Movement
88	157.425	157.425	x			Port Operations and Ship Movement

- Intership channels are for communications between ship stations. Intership communications should be restricted to Channels 6, 8, 72 and 77. If these are not available, the other channels marked for Intership may be used.
- Channel 70 is used exclusively for Digital Selective Calling (DSC) and is not available for regular voice communications.

Notes:

1. Channel 06 may also be used for communications between ship stations and aircraft engaged incoordinated search and rescue operations. Ship stations should avoid harmful interference to such communications on channel 06 as well as to communications between aircraft stations, ice breakers and assisted ships during ice seasons.
2. Within the European Maritime Area and in Canada, channels 10, 67 and 73 may also be used by the individual administrations concerned for communication between ship stations, aircraft stations and participating land stations engaged in coordinated search and rescue and anti-pollution operations in local areas. Channels 10 or 73 (depending on location) are also used for the broadcast of Marine Safety Information by the Maritime and Coast Guard Agency in the UK only.
3. Channel 13 is designated for use on a worldwide basis as a navigation safety communication channel, primarily for intership navigation safety communications.
4. Channels 15 and 17 may also be used for on-board communications provided the effective radiated power does not exceed 1 Watt.
5. The use of Channels 75 and 76 should be restricted to navigation related communication only and all precautions should be taken to avoid harmful interference to channel 16. Transmit power is limited to 1 Watt.

## U.S. Marine VHF Channels and Frequencies

CH. No	XMIT Freq	RCV Freq	Single	Freq Use
01A	156.050	156.050	x	Port Operations and Commercial, VTS. Available only in New Orleans / Lower Mississippi area. 1
03A	156.150	156.150	x	U.S. Government only
05A	156.250	156.250	x	Port Operations or VTS in the Houston, New Orleans and Seattle areas.
06	156.300	156.300	x	Intership Safety
07A	156.350	156.350	x	Commercial
08	156.400	156.400	x	Commercial (Intership only)
09	156.450	156.450	x	Boater Calling. Commercial and Non-Commercial.
10	156.500	156.500	x	Commercial
11	156.550	156.550	x	Commercial. VTS in selected areas.
12	156.600	156.600	x	Port Operations. VTS in selected areas.
13	156.650	156.650	x	Intership Navigation Safety (Bridge-to-bridge). Ships >20meters in length maintain a listening watch on this channel in US waters. 2, 6
14	156.700	156.700	x	Port Operations. VTS in selected areas.
15	-	156.750	x	Environmental (Receive only). Used by Class 'C' EPIRBs.3
16	156.800	156.800	x	International Distress, Safety and Calling. Ships required to carry radio, USCG, and most coast stations maintain a listening watch on this channel. 4
17	156.850	156.850	x	State Control 5
18A	156.900	156.900	x	Commercial
19A	156.950	156.950	x	Commercial
20	157.000	161.600		Port Operations (duplex)
20A	157.000	157.000	x	Port Operations
21A	157.050	157.050	x	U.S. Coast Guard only
22A	157.100	157.100	x	Coast Guard Liaison and Maritime Safety Information Broadcasts. Broadcasts announced on channel 16.
23A	157.150	157.150	x	U.S. Coast Guard only
24	157.200	161.800		Public Correspondence (Marine Operator)
25	157.250	161.850		Public Correspondence (Marine Operator)
26	157.300	161.900		Public Correspondence (Marine Operator)
27	157.350	161.950		Public Correspondence (Marine Operator)
28	157.400	162.000		Public Correspondence (Marine Operator)
61A	156.075	156.075	x	U.S. Government only
63A	156.175	156.175	x	Port Operations and Commercial, VTS. Available only in New Orleans / Lower Mississippi area.
64A	156.225	156.225	x	U.S. Coast Guard only

65A	156.275	156.275	x	Port Operations
66A	156.325	156.325	x	Port Operations
67	156.375	156.375	x	Commercial. Used for Bridge-to-bridge communications in lower Mississippi River. Intership only. 6
68	156.425	156.425	x	Non-Commercial
69	156.475	156.475	x	Non-Commercial
71	156.575	156.575	x	Non-Commercial
72	156.625	156.625	x	Non-Commercial (Intership only)
73	156.675	156.675	x	Port Operations
74	156.725	156.725	x	Port Operations
77	156.875	156.875	x	Port Operations (Intership only) 5
78A	156.925	156.925	x	Non-Commercial
79A	156.975	156.975	x	Commercial. Non-Commercial in Great Lakes only.
80A	157.025	157.025	x	Commercial. Non-Commercial in Great Lakes only
81A	157.075	157.075	x	U.S.Government only – Environmental protection operations.
82A	157.125	157.125	x	U.S. Government only
83A	157.175	157.175	x	U.S. Coast Guard only
84	157.225	161.825		Public Correspondence (Marine Operator)
85	157.275	161.875		Public Correspondence (Marine Operator)
86	157.325	161.925		Public Correspondence (Marine Operator)
87	157.375	161.975		Public Correspondence Marine Operator)
88	157.425	162.025		Public Correspondence only near Canadian border
88A	157.425	157.425	x	Commercial, Intership only

- Recreational boaters normally use channels listed as Non-Commercial: 68, 69, 71, 72, 78A.
- Channel 70 is used exclusively for Digital Selective Calling (DSC) and is not available for regular voice communications.
- Channels 75 and 76 are reserved as guard bands for Channel 16 and are not available for regular voice communications.

Notes:

1. The letter "A" following a channel number indicates simplex use of the ship station transmit side of an international semi-duplex channel. Operations are different from that of international operations on that channel.
2. Channel 13 should be used to contact a ship when there is danger of collision. All ships of length 20 meters or greater are required to guard VHF channel 13, in addition to VHF channel 16, when operating within U.S. territorial waters.
3. Channel is Receive Only.
4. Channel 16 is used for calling other stations or for distress alerting.
5. Output power is fixed at 1 watt only.
6. Output power is initially set to 1 watt. User can temporarily override this restriction to transmit at high power.

## Canadian Marine VHF Channels and Frequencies

CH No.	XMIT Freq	RCV Freq	Area of Operation Use
01	156.050	160.650	PC Public Correspondence
02	156.100	160.700	PC Public Correspondence
03	156.150	160.750	PC Public Correspondence
04A	156.200	156.200	PC Intership, Ship/Shore and Safety: Canadian Coast Guard S&R
04A	156.200	156.200	EC Intership, Ship/Shore and Commercial: Commercial fishing only
05A	156.250	156.250	Ship Movement
06	156.300	156.300	All areas Intership, Commercial, Non-commercial and Safety: May be used for search and rescue communications between ships and aircraft.
07A	156.350	156.350	All areas Intership, Ship/Shore, Commercial
08	156.400	156.400	WC, EC Intership, Commercial and Safety: Also assigned for operations in the Lake Winnipeg area.
09	156.450	156.450	AC Intership, Ship/Shore, Commercial, Non-commercial and Ship Movement: May be used to communicate with aircraft and helicopters in predominantly maritime support operations.
10	156.500	156.500	AC, GL Intership, Ship/Shore, Commercial, Non-commercial, Safety and Ship Movement: May also be used for communications with aircraft engaged in coordinated search and rescue and antipollution operations.
11	156.550	156.550	PC, AC, GL Intership, Ship/Shore, Commercial, Non-commercial and Ship Movement: Also used for pilotage purposes.
12	156.600	156.600	WC, AC, GL Intership, Ship/Shore, Commercial, Non-commercial and Ship Movement: Port operations and pilot information and messages.
13	156.650	156.650	All areas Intership, Commercial, Non-commercial and Ship Movement: Exclusively for bridge-to-bridge navigational traffic. Limited to 1-watt maximum power.
14	156.700	156.700	AC, GL Intership, Ship/Shore, Commercial, Non-commercial and Ship Movement: Port operations and pilot information and messages.
15	156.750	156.750	All areas Intership, Ship/Shore, Commercial, Non-commercial and Ship Movement: All operations limited to 1-watt maximum power. May also be used for on-board communications.
16	156.800	156.800	All areas International Distress, Safety and Calling <sup>2</sup>
17	156.850	156.850	All areas Intership, Ship/Shore, Commercial, Non-commercial and Ship Movement: All operations limited to 1-watt maximum power. May also be used for on-board communications.
18A	156.900	156.900	All areas Intership, Ship/Shore and Commercial: Towing on the Pacific Coast.
19A	156.950	156.950	All areas except PC Intership and Ship/Shore: Canadian Coast Guard only.
19A	156.950	156.950	PC Intership and Ship/Shore: Various Government departments
20	157.000	161.600	All areas Ship/Shore, Safety and Ship Movement: Port operations
21A	157.050	157.050	All areas Intership and Ship/Shore: Canadian Coast Guard only.
21B	-	161.650	All areas Safety: Continuous Marine Broadcast (CMB) service. <sup>3</sup>
22A	157.100	157.100	All areas Intership, Ship/Shore, Commercial and Non-commercial: For communications between Canadian Coast Guard and non-Canadian Coast Guard stations only.
23	157.150	161.750	PC Ship/Shore and Public Correspondence: Also in the inland waters of British Columbia and the Yukon.
24	157.200	161.800	All areas Ship/Shore and Public Correspondence
25	157.250	161.850	PC Ship/Shore and Public Correspondence: Also assigned for operations in the Lake Winnipeg area.
25B	-	161.850	AC Safety: Continuous Marine Broadcast (CMB) service.
26	157.300	161.900	All areas Ship/Shore, Safety and Public Correspondence



27	157.350	161.950	AC, GL, PC Ship/Shore and Public Correspondence
28	157.400	162.000	PC Ship/Shore, Safety and Public Correspondence
28B	-	162.000	AC Safety: Continuous Marine Broadcast (CMB) service.
60	156.025	160.625	PC Ship/Shore and Public Correspondence
61A	156.075	156.075	PC Intership and Ship/Shore: Canadian Coast Guard only.
61A	156.075	156.075	EC Intership, Ship/Shore and Commercial: Commercial fishing only.
62A	156.125	156.125	PC Intership and Ship/Shore: Canadian Coast Guard only.
62A	156.125	156.125	EC Intership, Ship/Shore and Commercial: Commercial fishing only.
64	156.225	160.825	PC Ship/Shore and Public Correspondence
64A	156.225	156.225	EC Intership, Ship/Shore and Commercial: Commercial fishing only.
65A	156.275	156.275	Intership, Ship/Shore, Commercial, Non-commercial, Safety: Search & rescue and antipollution operations on the Great Lakes. Towing on the Pacific Coast. Port operations only in the St. Lawrence River areas with 1W maximum power. Pleasure craft in the inland waters of Alberta, Saskatchewan and Manitoba (excluding Lake Winnipeg and the Red River).
66A	156.325	156.325	Intership, Ship/Shore, Commercial, Non-commercial, Safety and Ship Movement: Port operations only in the St. Lawrence River/Great Lakes Areas with 1-watt maximum power.
67	156.375	156.375	EC Intership, Ship/Shore and Commercial: Commercial fishing only.
67	156.375	156.375	All areas except EC Intership, Ship/Shore, Commercial, Non-commercial, Safety: May also be used for communications with aircraft engaged in coordinated search and rescue and antipollution operations.
68	156.425	156.425	All areas Intership, Ship/Shore and Non-commercial: For marinas and yacht clubs.
69	156.475	156.475	All areas except EC Intership, Ship/Shore, Commercial and Non-commercial
69	156.475	156.475	EC Intership, Ship/Shore and Commercial: Commercial fishing only.
71	156.575	156.575	PC Intership, Ship/Shore, Commercial, Non-commercial, Safety and Ship Movement
71	156.575	156.575	Intership, Ship/Shore and Non-commercial: For marinas and yacht clubs on the East Coast and on Lake Winnipeg.
72	156.625	156.625	EC, PC Intership, Commercial and Non-commercial: May be used to communicate with aircraft and helicopters in predominantly maritime support operations.
73	156.675	156.675	EC Intership, Ship/Shore and Commercial: Commercial fishing only
73	156.675	156.675	All areas except EC Intership, Ship/Shore, Commercial, Non-commercial, Safety: May also be used for communications with aircraft engaged in coordinated search and rescue and antipollution operations.
74	156.725	156.725	EC, PC Intership, Ship/Shore, Commercial, Non-commercial and Ship Movement.
77	156.875	156.875	Intership, Ship/Shore, Safety and Ship Movement: Pilotage on Pacific Coast. Port operations only in the St. Lawrence River/Great Lakes areas with 1W maximum power.
78A	156.925	156.925	EC, PC Intership, Ship/Shore and Commercial
79A	156.975	156.975	EC, PC Intership, Ship/Shore and Commercial
80A	157.025	157.025	EC, PC Intership, Ship/Shore and Commercial
81A	157.075	157.075	Intership and Ship/Shore: Canadian Coast Guard use only in the St. Lawrence River/Great Lakes areas.
81A	157.075	157.075	PC Intership, Ship/Shore and Safety: Canadian Coast Guard antipollution.
82A	157.125	157.125	PC Intership, Ship/Shore and Safety: Canadian Coast Guard use only.
82A	157.125	157.125	Intership and Ship/Shore: Canadian Coast Guard use only in the St. Lawrence River/Great Lakes areas.
83	157.175	161.775	PC Ship/Shore and Safety: Canadian Coast Guard use only.
83A	157.175	157.175	EC Intership and Ship/Shore: Canadian Coast Guard and other Government agencies.

83B	-	161.775	AC, GL Safety: Continuous Marine Broadcast (CMB) Service.
84	157.225	161.825	PC Ship/Shore and Public Correspondence
85	157.275	161.875	AC, GL, NL Ship/Shore and Public Correspondence
86	157.325	161.925	PC Ship/Shore and Public Correspondence
87	157.375	161.975	AC, GL, NL Ship/Shore and Public Correspondence
88	157.425	162.025	AC, GL, NL Ship/Shore and Public Correspondence

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

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

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

NL: Newfoundland and Labrador

PC: Pacific Coast

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

All areas: includes East and West Coast areas

Notes:

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

## European Private Channels and Frequencies

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

Country	CH No.	XMIT Freq	RCV Freq	Freq Use
Belgium	96	162.425	162.425	Marina
Denmark	L1	155.500	155.500	Leisure
	L2	155.525	155.525	Leisure
Denmark, Finland, Norway & Sweden	F1	155.625	155.625	Fishing
	F2	155.775	155.775	Fishing
	F3	155.825	155.825	Fishing
Finland, Norway&Sweden	L1	155.500	155.500	Leisure
	L2	155.525	155.525	Leisure
	L3	155.650	155.650	Leisure
Netherlands	31	157.550	162.150	Marina
	37	157.850	157.850	Leisure
UK	M1	157.850	157.850	Marina
	M2	161.425	161.425	Marina

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