Sepura Marine Kit

MOD-16-2028

Issue: 1.2
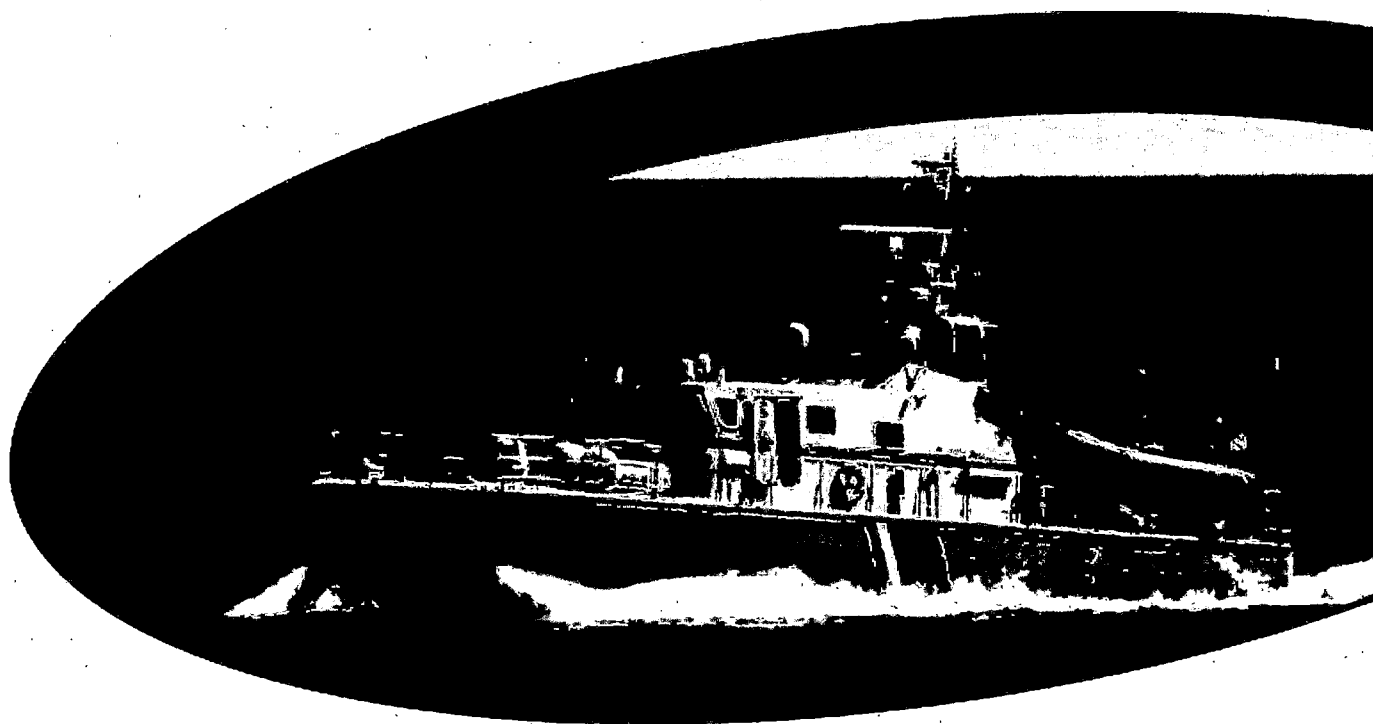
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Product Bulletin

Introduction

Sepura mobile and gateway products are available packaged within a marine kit to provide a fully waterproof (IP67) TETRA communication system for fast response, patrol and rescue craft.

A variety of accessories allow the installation to be tailored to meet the varied needs of users.
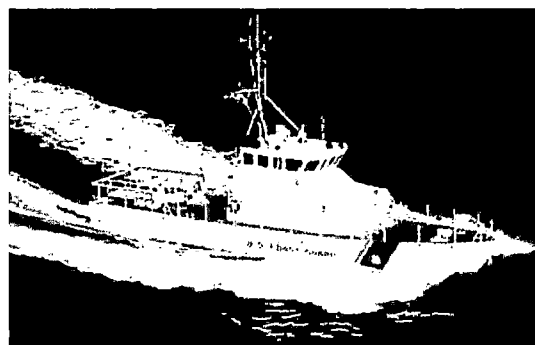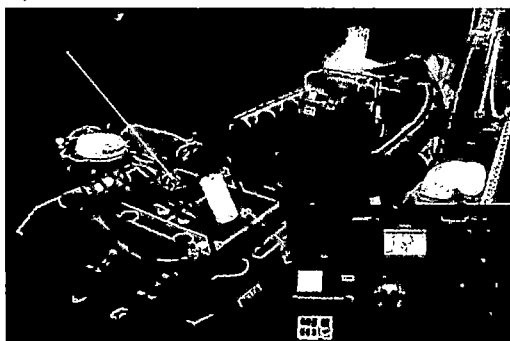
Full details for installation of the marine kit can be found in MOD-08-562 (Marine kit installation guide)

Abbreviations

Convention	Description
I/O	Input / Output
E2EE	End to End Encryption
RIB	Rigid Inflatable Boat

Conventions

Convention	Description
☑	Note icon, emphasizes related, reinforcing, or important information.
⚠	Caution icon. Indicates actions or processes that require caution from the user

Issue history

Version	Date	Change
Issue 1	1st Feb 2016	Update to earlier bulletin to remove console enclosure and add SCC2 plus supporting cables. Release as Issue 1. (Source data from v1.1 of SB-P-09-4118)
Issue 1.1	2nd Aug 2016	Updated to include SCC3 (IP67)
Issue 1.2	9th Jan 2018	Removed power cable from list of parts included with enclosure kit

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Marine enclosures

Marine console

Sepura Code: Language dependant

The console for the Marine kit uses the Sepura IP67 Colour Console (SCC2 or SCC3)

VAC connector. To maintain IP67 rating, the cover must be fitted when no accessory connected

The console can be mounted using the RAM pivot mount unit which is attached to the rear of the console. (Ordered separately, see later section 'Marine kit options' for details)

The rear of the console has robust IP67 rated connectors fitted. When not in use, the individual connector can be sealed using the attached plug

Console to transceiver connection

IP 67 rated audio accessory connection AAI 1 Connection with sealing cap.

IP 67 rated audio accessory connections AAI 2 with sealing cap.

IP67 rated breather prevents pressure differences forming between the inside and outside of the case as the outside temperature varies

View from console rear

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☑
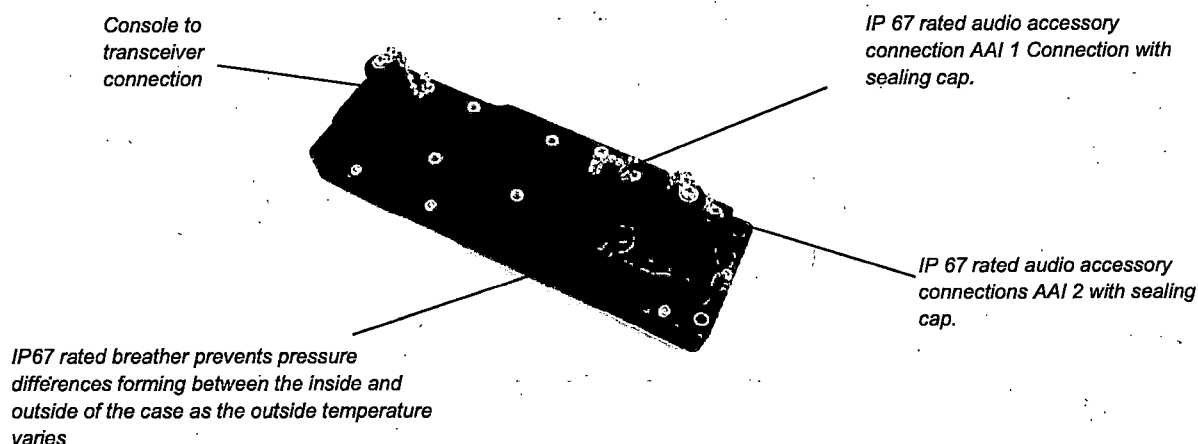
- Only the marine accessories detailed in the section, 'MARINE KIT OPTIONS' are compatible with the Sepura IP67 Colour console
- Cabling options allow the marine console enclosure to be connected either to the Marine transceiver housing, or to a standard transceiver mounted in a dry area to allow maximum installation flexibility
- Programming/key loading can be carried out by direct connection to the console when connected to the transceiver

⚠

- IP67 is achieved <u>only</u> when fitted with Sepura cables or caps. An audio accessory MUST be attached to the 'Audio 1' connection. 'Audio 2' is to remain capped unless required.

Marine transceiver housing

Sepura Code: 300-00517

Digital I/O connection
Speaker
GPS antenna
TETRA RF antenna
Fuse 250 mA, digital I/O
Dual Fuse 10 A Power input

12 V DC input and ignition sense

Humidity indicator
Condensation indicator turns pink when Silica sachets need recharging

Breather vent
IP67 rated breather prevents pressure differences forming between the inside and outside of the case as the outside temperature varies

Console interface 2
Console interface 1

Robust stainless steel mount housing secures and cushions transceiver from typical RIB 'body slam.

View from showing transceiver enclosure in robust mount housing

All the transceivers standard connections – except PEI - are re-presented on robust IP67 rated connections.

- Only the marine cabling detailed in the section, 'MARINE KIT OPTIONS' are compatible with the transceiver marine housing
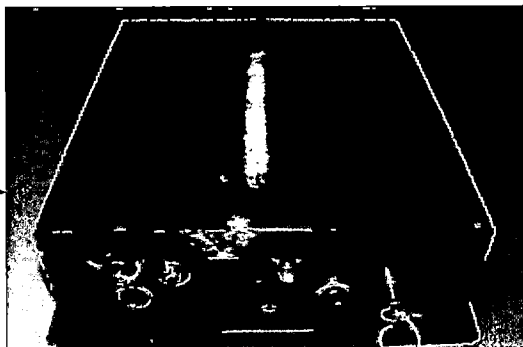- Console interface 1 and 2 ports allow the connection of dual marine cased consoles.
- IP67 is achieved only when fitted with Sepura cables or caps. An audio accessory MUST be attached to the 'Audio 1' connection. 'Audio 2' is to remain capped unless required.
- Do NOT use any of screws already on the transceiver to mount it. Undoing the screws will break the IP67 rating.
- The marine kit does **not** make available either of the two PEI ports supported by the transceiver

What is included in the enclosure kit?
Ordering 1 off 300-00517 the following is provided

- IP67 rated marine transceiver enclosure, but no radio.
- Mounting bracket

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Dimensions of the enclosure

Dimension	Value
214	254
198	
94	
222	
79	

Outline of support cradle

INPUT/OUTPUT SPEAKER GPS AERIAL 250mA 10A 10A

POWER INTERFACE 1 INTERFACE 2

104

Moisture Indicator   Breather

275
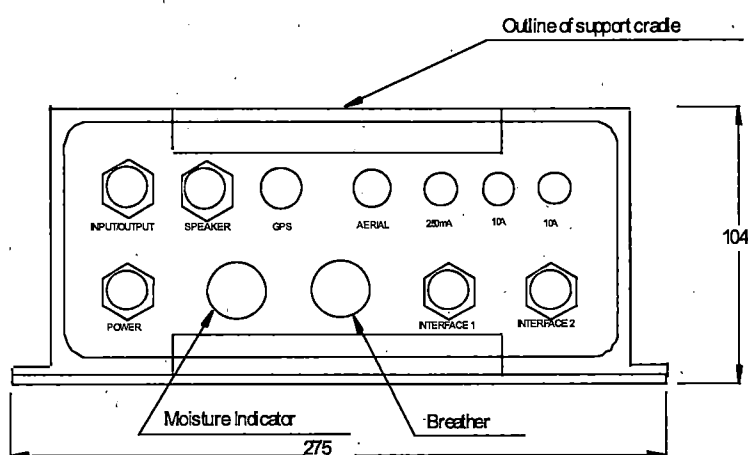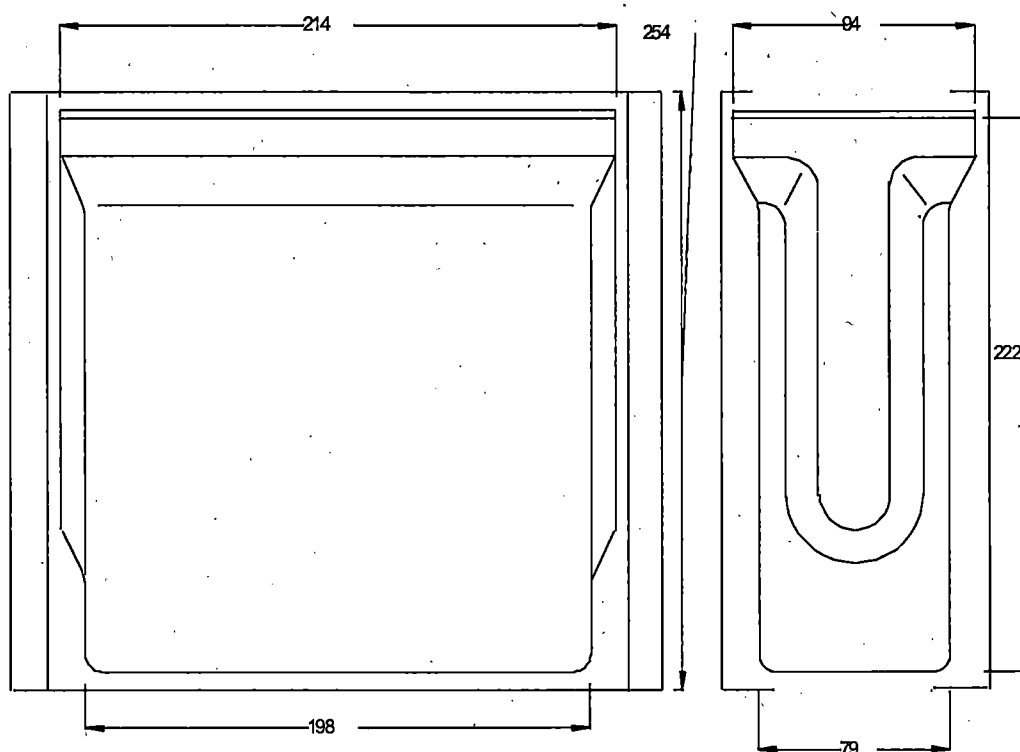
Marine kit options

Universal AMPS fitting kit
Sepura part numbers: 1 x RAM double socket 300-00862 + 2 x AMPS base plates 300-00860

The Sepura IP67 Colour Console SCC2 or SCC3 (IP67) can be mounted onto a secure panel by using the fully adjustable AMPS mounting bracket. This consists of two parts which must be ordered separately.

Marine power cable
Sepura part number: 300-00575

The power cable consists of a 1M long, 10A rated cable terminated at one end with an IP67 Binder, 6 pin connector. The other end is left un-terminated. The cable is not externally fused due to the transceiver housing already being dual fused.

Where the installation links the transceiver to a boats on-board intercom system no speaker is required, in this circumstance the speaker connector should be sealed with the cap provided.

Marine remote console cable
The design of the Sepura SRG3900 Gateway radios allows the SCC2 or SCC3 (IP67) to be installed up to 9.5m away from the marine housed radio. The cables are terminated in an IP67 rated connectors suitable for connection to the marine transceiver and console.

Depending upon installation type (Full or half marine), a number of different cable lengths are available:-

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Half Marine		Full Marine	
Part No	**Description**	**Part No**	**Description**
300-01050	SCC2 Half marine remote console cable 1.5m	300-00994	SCC2 Marine remote console cable 1.5m
300-01047	SCC2 Half marine remote console cable 4.5m	300-01009	SCC2 Marine remote console cable 4.5m
300-01049	SCC2 Half marine remote console cable 9.5m	300-01048	SCC2 Marine remote console cable 9.5m

Note that these cables are also compatible with the SCC3 (IP67) console

Digital marine I/O cable
Sepura part number: 300-00521

The single transceiver digital output and the 3 digital inputs are re-presented on a robust IP67 rated connector for connection to various on-board boat systems. The cable consists of an IP67 rated connector at one end with the user end of the cable left un-terminated to allow the integrator flexibility. The cable length is approximately 0.5M

Transceiver programming adapter cable
Sepura part number: 300-00522

Once the radio has been installed inside the marine housing, the programming adapter cable allows a standard Sepura programming lead (300-00065) and E2E key fill lead (300-00147 or 300-00325) to be used by providing the necessary interface between the marine housing socket and the Sepura programming cables.

The programming adaptor cable is approximately 200mm long and is terminated in a 12 way, IP67 rated connector suitable for connection to the transceiver marine housing only. The other end of the cable is terminated with a standard 15way - D type connector.

- For programming - it must attach to console interface 1 or 2 of the transceiver marine housing.
- For E2E key fill – it must attach to console interface 2 of the marine transceiver housing.
- The programming adapter cable will **not** attach to the console

Marine speaker
Sepura part number: 300-00642 (half marine)/300-00525 (Full marine)

This marine speaker is an IP67 rated re-entrant speaker and can be mounted in exposed conditions.

The full marine version is terminated with an IP67 rated connector which connects to the speaker connector on the transceiver enclosure.

The half marine version is terminated with an AMP style connector to plug directly to the flying lead mating socket from the SRG power cable (dry installation only).

A mounting bracket is also included with the loudspeaker.
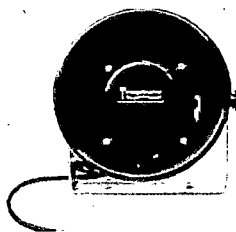
Boat intercom cable
**Sepura part number: 300-00524**

This cable facilitates connection to a boats on-board intercom system. Terminated at one end with an IP67 rated connector, this cable must be attached to one of the audio accessory connections on the rear of the marine console housing. The user end of the cable is left un-terminated for integrator flexibility. (Pin out/colour code is shown in the drawing below)

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Suitable on board intercom systems include those provided by:

- DS-developments – Neptune intercom system
- Greytronics
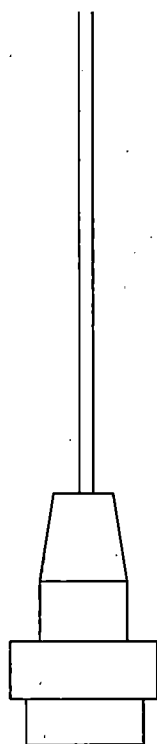
6 Core Screened Cable
1.5 mtr 7/0.2 (0.22 mm²)

Signal Details

Pin A White	Mic +
Pin B Screen	Mic --
Pin C Red	PTT +
Pin D Yellow	Ear +
Pin E Green	Ear −
Pin F Black	PTT --
Pin G Blue	Screen

Binder (99-4833-00-12)

12 pin/male IP67 rated plug

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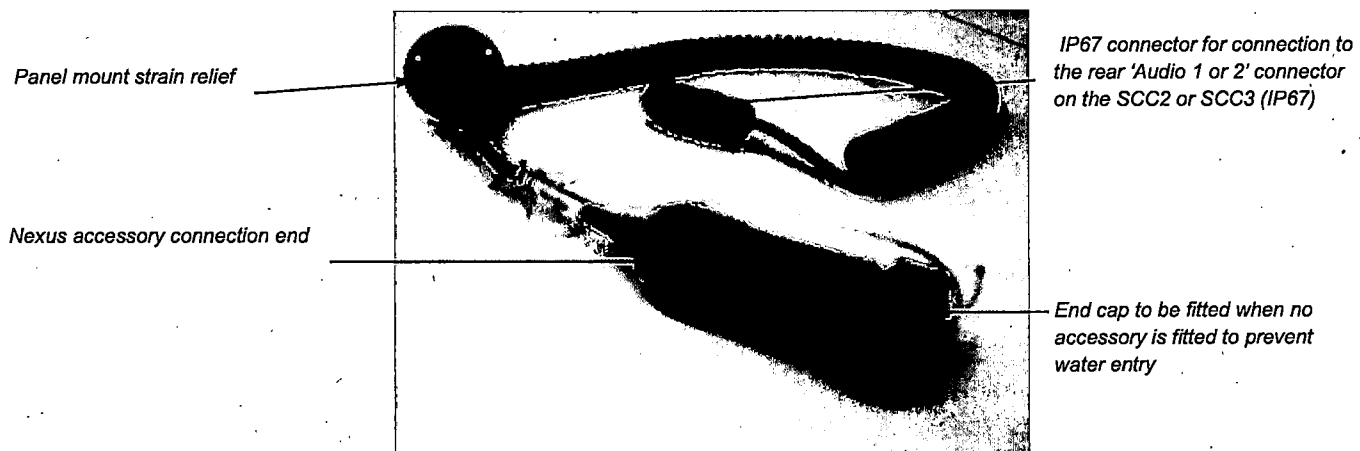Issue: 1.2

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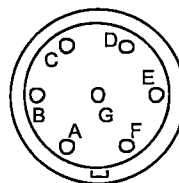
Marine Accessory lead

Sepura part number: 300-01043

The accessory lead is designed to allow for attachment of an audio accessory with their own PTT. It can be attached to either of the audio accessory connectors on the rear of the SCC2 or SCC3 (IP67).

A flying socket is brought out through a panel on the boats 'dash board'. It is designed to hang down to prevent water and is an 'anti snatch' design that separates if pulled – such as in an accident.

Panel mount strain relief

IP67 connector for connection to the rear 'Audio 1 or 2' connector on the SCC2 or SCC3 (IP67)

Nexus accessory connection end

End cap to be fitted when no accessory is fitted to prevent water entry

Ordering 1 off 300-01043 the following is provided

- 1 off 300-01043 accessory lead.
- Strain relief for panel mounting
- Terminated in an IP67 rated connector suitable for connection to an audio accessory connector on the rear of the SCC2 or SCC3 (IP67).
- 'Anti-snatch' IP67 Nexus socket for attachment of an audio accessory with its own PTT such as microphone (300-00497)
- Nexus supplied with cap which must be fitted to prevent water entering when an accessory is not connected.

Marine Accessory lead with panel mounted PTT
**Sepura part number: 300-01045**

The accessory lead with PTT is designed to allow for attachment of an audio accessory **without** its own PTT.

It is similar to the marine accessory lead 300-01043 except it has an additional cable (approximately 2.5M) to which a PTT button (supplied with kit) is attached.

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Marine fist microphone
Sepura part number: 300-00497

The full IP67 marine fist microphone is attached via the 'anti-snatch' connector of the Audio Accessory lead (300-01043) to either of the audio accessory connectors on the rear of the SCC2 or SCC3 (IP67).
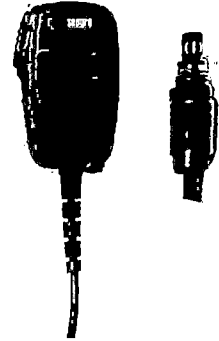
What is included in the kit?

Ordering 1 off 300-00497 the following is provided

- 1 off 300-00497 Handset for marine kit.
- Terminated in a Nexus IP67 rated anti snatch connector suitable for connection to one of the audio accessory connectors on the rear of the SCC2 or SCC3 (IP67) via the Audio accessory lead (300-01043).
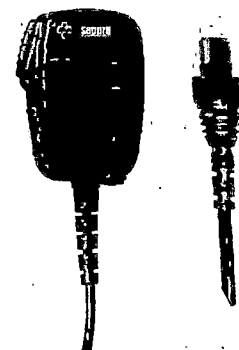
IP Rating: Fist Microphone IP67; Plug: IP67

Alternative options to using the snatch lead version are the LTW Fist microphone or the VAC Speaker Microphone. Both of these options connect directly to the SCC2 or SCC3 (IP67)

LTW Fist microphone
Sepura part number: 300-00894

This IP67 Microphone is identical to the 300-00497 (above) with the exception different termination plug, allowing it to be connected directly to the LTW socket (AAI 1 or AAI 2), located on the rear of the SCC2 or SCC3 (IP67).

IP Rating: Fist Microphone IP67; Plug: IP67

VAC Speaker Microphone
Sepura part number: 300-00722

Terminated with a VAC connector, the Speaker Microphone is fitted to the front of the SCC facilitating easy removal. An integrated loudspeaker further simplifies installation by removing the need for a separately located loudspeaker. (Note:- To use as a fist microphone only, the speaker can be programmed 'switched off' using the Radio Manager)

The Speaker Microphone is a half -duplex accessory and is supplied with a mounting bracket with magnetic off-hook detection.

IP Rating: Speaker/Microphone IP54; Plug: IP54
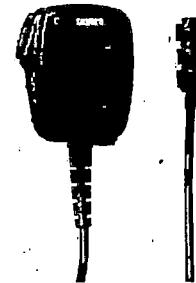
Marine Headset – Aviator Style
Sepura part number: 300-00528

The headset is recommended if the user wants to take advantage of full duplex call capability, maximum environmental noise blocking and hands free operation during all calls.

It is equipped with a noise reduction microphone and its robust style is fully adjustable for the users comfort, making it ideal for use in noisy marine environments.

The headset has no PTT and must be connected via 'Audio accessory lead with panel mounted PTT' (300-01045) to either of the audio connections at the rear of the Marine console enclosure.

Ordering 1 off 300-00528 the following is provided

- 1 off 300-00528 Headset for marine kit, without PTT.
- Handset terminated in an IP67 rated connector suitable for connection to the 'anti-snatch' socket on 'Audio accessory lead with panel mounted PTT'

IP Rating: Headset IP67; Plug: IP67

> ☑ Please note that the headset has no PTT button, the headset must be ordered with item 300-01045 'Audio accessory lead with panel mounted PTT'.

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Marine headset - Breeze style
Sepura part number: 300-00623

A light weight alternative to the Aviator style headset is Breeze style headset. The headset also provides full duplex call capability, a noise reduction microphone and hands free operation during all calls.

The headset has no PTT and must be connected via 'Audio accessory lead with panel mounted PTT' (300-01045) to either of the audio connections at the rear of the Marine console enclosure.

Ordering 1 off 300-00623 the following is provided

- 1 off 300-00623 Headset for marine kit, without PTT.
- Handset terminated in an IP67 rated connector suitable for connection to the 'anti-snatch' socket on 'Audio accessory lead with panel mounted PTT'
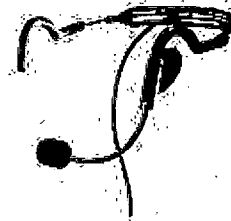
IP Rating: Headset IP31; Plug: IP67

> Please note that the headset has no PTT button, the headset must be ordered with item 300-01045 'Audio accessory lead with panel mounted PTT'.

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Marine grade TETRA antenna
Sepura part number: 300-00533 (380-400 MHz) / 300-00532 (410-430 MHz)

Marine grade antennas are flexible, or ratchet mounted to facilitate lowering, they require no ground plane and are sealed to prevent salt corrosion. (see note 1 below)
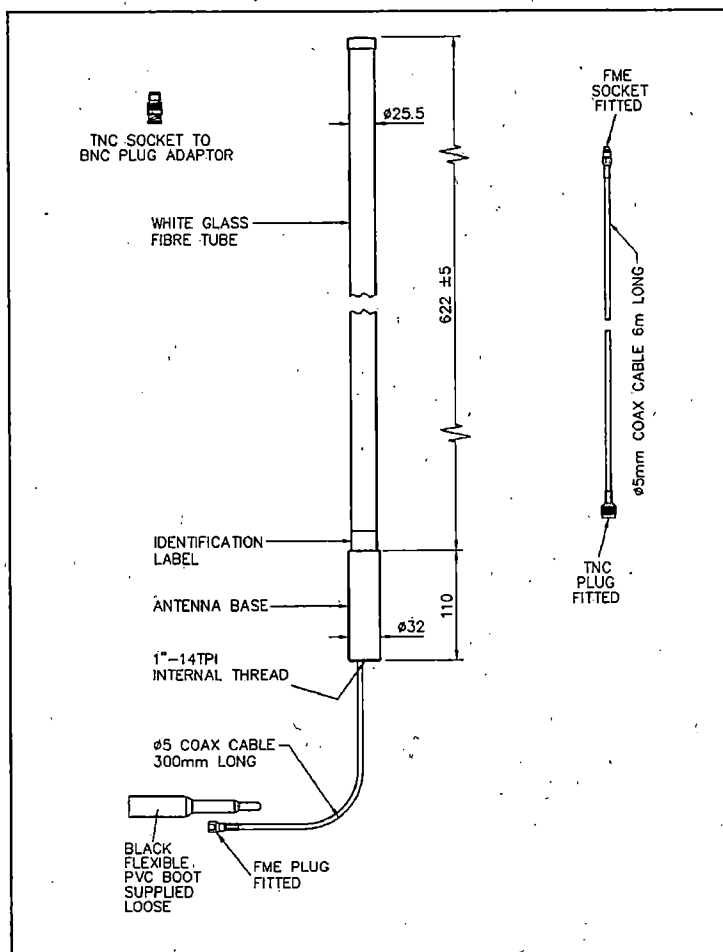
Marine grade Combined GPS and TETRA antenna
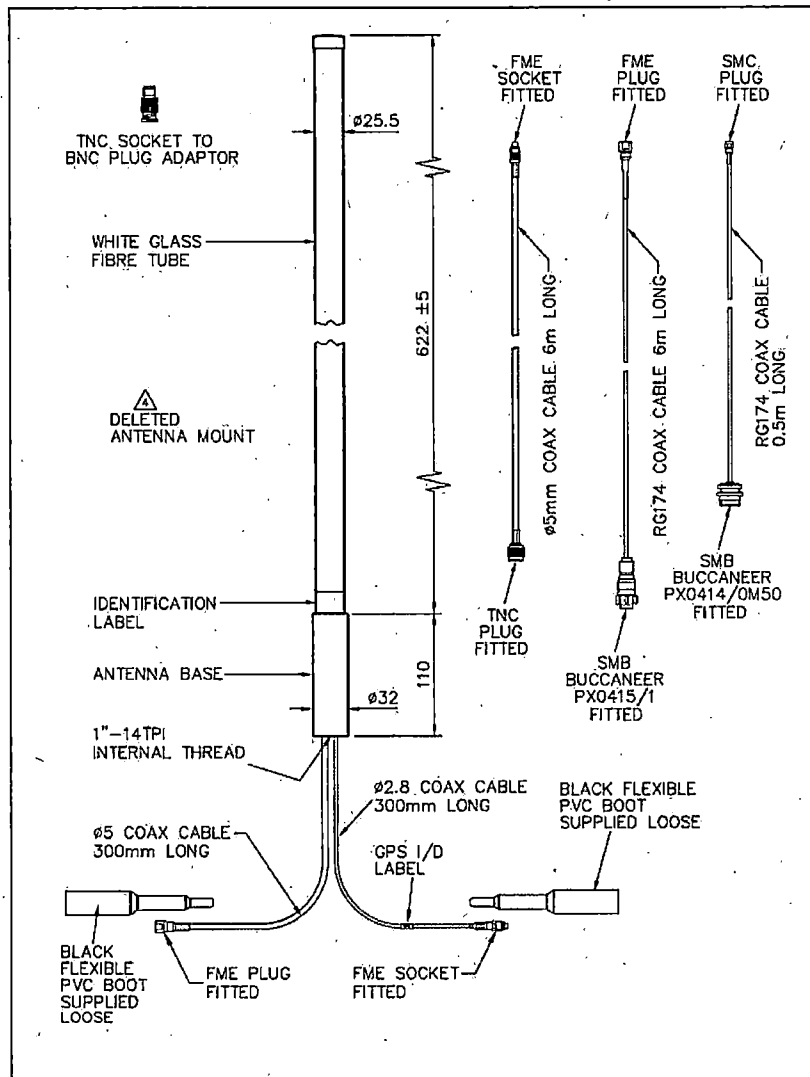**Sepura part number: 300-00530 (380-400Mhz RF+GPS) / 300-00531 (410-430MHz)**

Marine grade antennas are flexible, or ratchet mounted to facilitate lowering, they require no ground plane and are sealed to prevent salt corrosion. (see note 1 below)
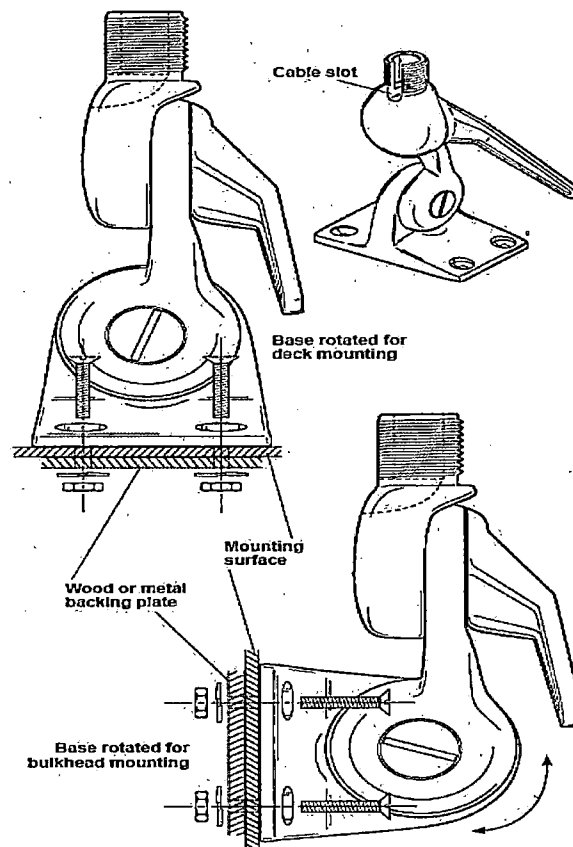

Note 1

To ensure full IP rating the installer must use external means of waterproofing the RF connections between the antenna and the radio (i.e. self-amalgamating tape to waterproof the connector joints). This is standard practice for most RF installation in challenging environments.

Stainless Steel Ratchet Mount

Sepura part number: 300-00595

A stainless steel ratchet mount can be utilised for installing the antenna. To resist the hostile conditions of salt water, the ratchet is made from 316 grade stainless steel. The unit has a simple release & lock mechanism to allow the antenna to be angled once the ratchet has been mounted. To simplify installation, a slot has been cut into the top of the unit to allow routing of the antenna cable.

Cable slot

Base rotated for
deck mounting

Mounting
surface

Wood or metal
backing plate

Base rotated for
bulkhead mounting

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Half marine remote console cable

For installations where only the console is exposed to the elements, the 'half marine remote console cable' plugs into the standard D15 on the back of the dry fit transceiver, and the other end plugs into the Marine Console Housing.

Sepura IP67 Colour console, installed in the open and exposed to the elements.

Transceiver installed in a communications room, protected from the elements and NOT mounted in a marine housing
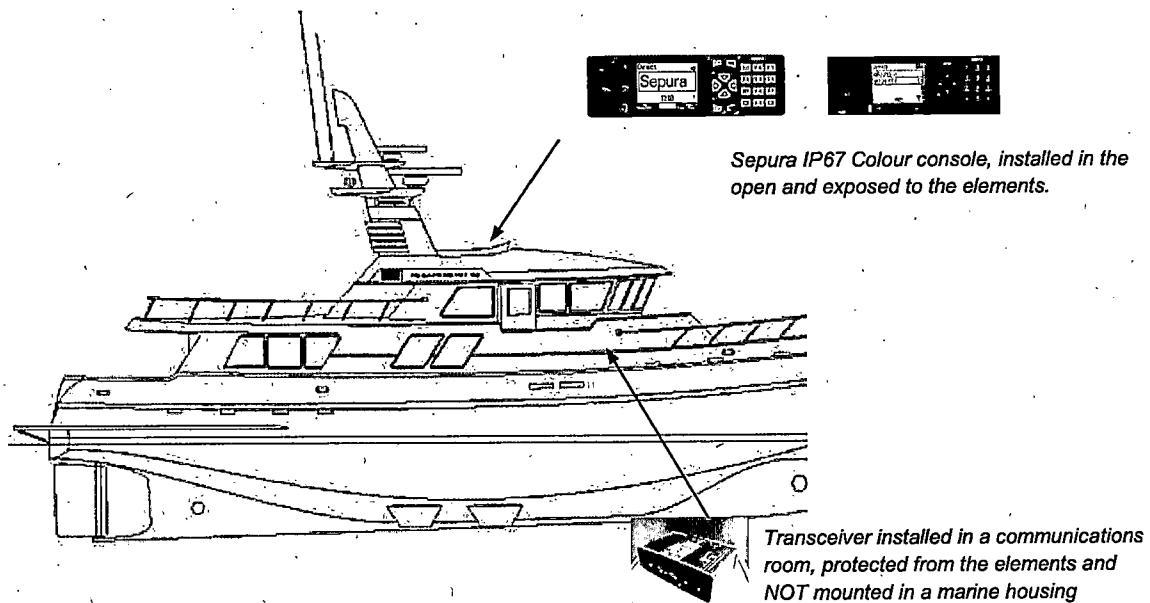
The design of the Sepura mobile and gateway radios allows this marine housed console to be installed up to 9.5m away from the marine housed radio.

A number of different cable lengths are available:-

|		
300-01050	Half marine remote console cable 1.5m	*Connection to 'interface' at rear of console*
300-01047	Half marine remote console cable 4.5m	
300-01049	Half marine remote console cable 9.5m	*Connection to normal interface ½ on SRM/G*

What is included in the kit?

- 1 off remote half marine remote console cable terminated in:
  - An IP67 rated connector suitable for connection to the Sepura IP67 Colour Console SCC2 or SCC3 (IP67)
  - A D15 connector suitable for connection to transceiver that is NOT housed in a marine enclosure.

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Guide to ordering

Installation scenario 1: Rib - all equipment exposed to the elements

Marine housed transceiver and marine
housed console can be installed in the
open and exposed to the elements.
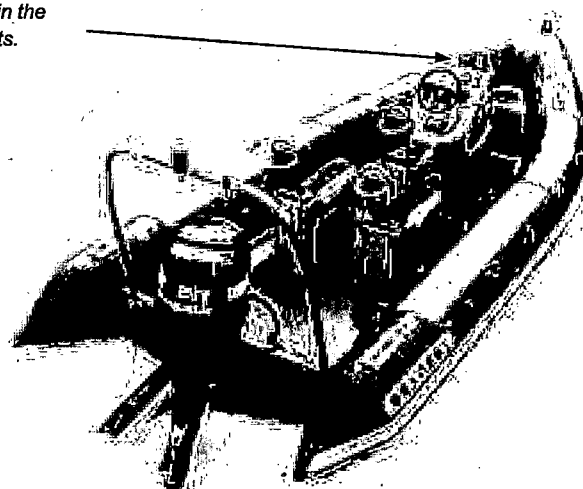
Typical RIB order guide

Core parts to order:

1 off Marine Transceiver Enclosure, 300-00517

1 off Sepura IP67 Colour Console SCC2 or SCC3 (IP67)

1 off Power Cable 300-00575

1 off Remote marine console cable, available in 1.5m, 4.5m and 9.5m lengths,

1 off SRG3900 (Only 380-430MHz product has been through EU approvals)

1 off Control Console

Audio accessories (choose up to 2 accessories per console)

1 off boat intercom cable, 300-00524 (1 end is un-terminated to allow attachment to 3rd party intercoms)

1 off Fist Mic + accessory lead = 300-00497 + 300-01043

1 off Headset + accessory lead with PTT = 300-00528 (or 300-00623) + 300-01045

1 off Fist Mic (for direct connection to SCC2) = 300-00894

Other:

1x Digital I/O cable, 300-00521 (to use the digital I/O lines on the radio)

1x Data/Programming adapter cable 300-00522, allows use of standard SRG programming and key fill cables

1 off RF (380-400MHz) + GPS antenna, 300-00533 (unless user supplies own)

1 off Stainless steel ratchet mount for Marine antenna (if required) 300-00595

RAM mount – 1 x RAM double socket300-00862 + 2 x RAM base plates 300-00860

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Installation scenario 2: Patrol boat - only console exposed to elements.

Sepura IP67 colour console, installed in the open and exposed to the elements.

Transceiver installed in a dry area, protected from the elements and NOT mounted in a marine housing and possible location for a second console
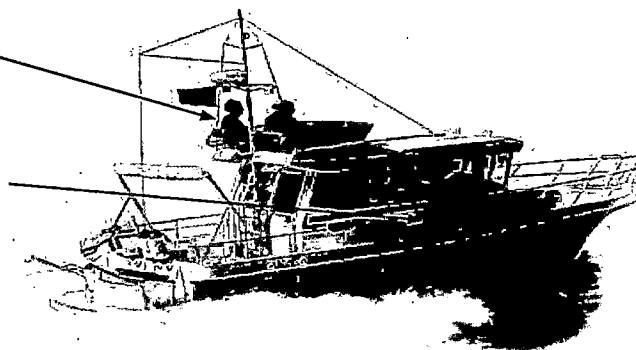
Typical patrol boat order guide

Core parts to order

1 off Sepura IP67 Colour console SCC2 or SCC3 (IP67)

1 off 'Half marine' remote console cable, available in 1.5, 4.5m and 9.5m lengths, this connects a Marine console to a dry fit SRG

1 off SRM/G 3500 (Only 380-430MHz product has been through EU approvals)

Audio accessories (choose up to 2 accessories per console)

1 off Fist Mic + accessory lead = 300-00497 + 300-01043

1 off Headset + accessory lead with PTT = 300-00528 + 300-01045

Other:

1x Digital I/O cable, 300-00521 (to use the digital I/O lines on the radio)

1x Data/Programming adapter cable 300-00522, allows use of standard SRG programming and key fill cables

1 off RF (380-400MHz) + GPS antenna, 300-00533 (unless user supplies own)

1 off Stainless steel ratchet mount for Marine antenna (if required) 300-00595

Optional second console in dry lower cabin:

1 off Control Console

1 off standard remote console cables, available in 0.5m, 2m, 5m and 10m lengths

1 off console pivot mount, part number 300-00084

Choose up to 2 off standard audio accessories from 'SB-P-05-4032 Mobile and Gateway accessories'

Other:

1x Digital I/O cable, 300-00521 (to use the digital I/O lines on the radio)

1x Data/Programming adapter cable 300-00522, allows use of standard SRG programming and key fill cables

1 off RF (380-400MHz) + GPS antenna, 300-00533 (unless user supplies own)

1 off Stainless steel ratchet mount for Marine antenna (if required) 300-00595

Parts for Marine Kits

Part Number	Description
300-00517	Marine transceiver enclosure (without transceiver)
300-00994	Marine remote console cable 1.5m
300-01009	Marine remote console cable 4.5m
300-01048	Marine remote console cable 9.5m
300-00521	Marine digital I/O cable 0.5m
300-00522	Marine transceiver programming adapter - use with 300-00065 or E2EE key fill cable
See description	Sepura IP67 colour console. See MOD-09-1119 for details of consoles and available language options.
300-00524	Marine boat intercom cable (1 end un-terminated) 1.5m
300-00525	Marine 12W speaker with mounting bracket and 1m cable

300-00497	Marine fist mic (used with 300-01043)
300-00894	IP67 fist mic (for direct connection rear of SCC2 or SCC3 (IP67))
300-00722	IP54 Speaker microphone (for direct connection to front of SCC2 or SCC3 (IP67)
300-00528	Marine headset - Aviator style for high noise environment (IP67). Connects to 300-01045
300-00623	Marine headset - Breeze style (IP31). Connects to 300-01045
300-00530	Marine TETRA/GPS antenna 380-400Mhz, (incl cables & RF adaptor)
300-00531	Marine antenna with GPS 410-430Mhz, (incl cables and adaptor)
300-00532	Marine antenna 410-430Mhz
300-00533	Marine antenna, 380-400Mhz
300-01050	Half marine remote console cable 1.5m.
300-01047	Half marine remote console cable 4.5m
300-01049	Half marine remote console cable 9.5m
300-01043	Marine audio accessory cable (for accessories with their own PTT)
300-01045	Marine audio accessory cable with panel mount PTT
300-00575	Marine 12V DC power cable
300-00595	Marine antenna stainless steel ratchet mounting bracket (slotted) - Antenna not included
300-00602	Marine Service Centre Test Equipment Kit
300-00603	Marine Kit - Service consumable kit
300-00642	Half Marine 12W speaker

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Notice

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